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ABSTRACT

This was a study of the influence of unintended interracial contact and characteristics of the contact situation on attitude-related action and attitude change. It was designed to determine if persons with initially negative racial attitudes would change these attitudes by an experimental experience. The research subjects were white students from border southern colleges selected from the anti-Negro half of a large pool of potential subjects. Equally prejudiced persons were selected as controls. The students were hired for part-time work, a natural situation, and discovered only after they began work that they were to have Negro co-workers. The subject was led by the task requirements of the situation and by the actions of his supervisor and co-workers to experience cooperative contact with one Negro student (a confederate) and to develop a conversational acquaintance with a second worker. At the end of the final session, the subject rated each one on various aspects of competence character and personality. Several months later, the subject responded to the same racial attitudes scale that he took before the experiment. Thus, the possible emergence of both immediate and/or lasting attitude change is assessed. (Author/LM)

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The Effect of Unintended Interracial Contact
Upon Racial Interaction and
Attitude Change

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INTRODUCTION

Objectives of the Research

The research being reported here has two objectives: (1) to investigate the power of the social situation to influence the social behavior of persons toward individuals from groups they dislike; (2) to determine the conditions under which unintended contact with persons from a disliked group changes intergroup attitudes.

The first of these objectives has been discussed widely in recent years as an aspect of the "attitudes vs. actions" problem. Positions taken in this discussion range between two extremes: (1) Social actions (what people do and what they say) are determined primarily by related social attitudes, (2) Social actions are determined primarily by non-attitudinal factors, in particular by characteristics of the social situation.

The second objective--to determine when, if ever, unintended contact between persons reduces intergroup hostility--is an aspect of the broader question of the determinants of attitude change. Contact between social groups sometimes results in destructive conflict and, at other times, leads to mutual understanding. The reasons for this difference are as yet undetermined.

As applied to race relations and the mandatory desegregation of schools in the United States, the research carried out may help provide answers to two questions: (1) Might one introduce into school settings teaching practices and administrative influences which would lead students with negative racial attitudes to exhibit harmonious and cooperative interracial relationships? (2) If such relationships developed could one make of them an educational experience that would bring about favorable changes in racial attitude?

A. Brief Description of the Study

In brief, this is a study of the influence of unintended interracial contact and characteristics of the contact situation on attitude-related action and attitude change. The research subjects are white students from colleges in a city in the border South. They are selected from the anti-Negro half of a large pool of potential subjects. Equally prejudiced persons are selected from this same pool to serve as controls. The subjects are hired for part-time work, discovering only after they begin work that they are to have Negro co-workers. The experiment is conducted in this setting in order to preserve the natural character of the experience as it might be encountered in a school or college or on a job.

Included in the pre-experimental selection tests are items ascertaining the subject's positions on race relation policies. During the course of the experiment a second white student (a confederate) makes known his integrationist positions on these same policies. The positions taken by the subject in his subsequent conversations with his white co-worker are recorded and compared with his initial positions. Changes in the direction of the co-worker's views offer one opportunity to explore situational influences on attitude-related social behavior.

The subject is led by the task requirements of the situation and by the actions of his supervisor and co-workers to experience cooperative contact with one Negro student (a confederate) and develop a conversational acquaintance with a second. This continues for 20 days, two hours per day. At the end of the final session, after saying good-bye to his co-workers, the subject rates each one on various aspects of competence, character and personality. This provides an opportunity to examine the effect of the experimental experience on the development of liking and respect for individuals from the disliked group.

Several months later the subject is re-tested in a setting removed from that of the part-time job, by a person unconnected with his job experience. Here he responds again to the questions asked in the tests taken prior to his selection as a subject. His opinions are compared with his pre-experimental ones to determine whether change has occurred. The equally prejudiced persons who were not exposed to the experimental experience are re-tested also for comparison purposes.

Hypotheses

While the research is cast more in an exploratory than in a hypothesis-testing mold it is possible to state certain expectations with respect to its outcome.

1. The highly prejudiced white subjects in the experiments will, despite their prejudice, be friendly to and cooperate with their Negro co-workers.
2. Subsequent to the expression of integrationist views by a white confederate, the prejudiced subject will respond by endorsing policy positions contrary to the segregationist ones he has previously taken under private test-taking conditions.
3. At the end of the experiment the subjects will express for their Negro co-workers a degree of liking and respect equivalent to that they express for their white co-workers.
4. From the pre-experimental to the post-experimental

tests the subjects will become more favorable in their privately expressed, attitudinal self-descriptions than will their equally prejudiced controls.

5. From the pre-experimental to the post-experimental tests the subjects will show more favorable attitudes on indirect attitude measures than will their equally prejudiced controls.

GENERAL THEORETICAL CONSIDERATIONS

A conceptual analysis of the phenomena with which this research is concerned is presented in the next section. However, several background considerations and points of view have influenced the nature of this analysis. Before presenting the analysis itself these will be identified and briefly discussed.

A Recurring Sequence of Events as a Focus for Research

The phenomena under examination constitute an instance of a recurring sequence of events--one which involves contact between a person and members of a group he dislikes, and his reaction to this experience. The sequence begins with the events that bring an individual into unintended contact with a member or members of the disliked group. It continues with some type of association or interaction between the individual and the disliked persons. It includes the potential development of friendly (or unfriendly) behavior to these persons. It continues with favorable (or unfavorable) behavior toward strangers from the disliked group or toward some symbolic representation (e.g., name; picture) of the group. Sometimes it is possible to infer that attitude change has taken place in the individual who has experienced the sequence of events.

The study to be reported here focuses necessarily on limited aspects of this event sequence. For this reason it will be helpful to illustrate it with a somewhat broader example. In the example I will refer to my research subject as Mr. White and have him in contact with a Mr. Brown, a member of a non-white group Mr. White dislikes.

Mr. White had just been married and needed a job. During his military service he had had airplane traffic control experience. A position in this field becomes available at a local commercial airport. While inquiring about the position, White found that at least one or more of his group of co-workers would be non-white. Mr. White looked down on nonwhites, as did his friends and neighbors. After vacillating until the last moment, White took the position. He experienced relief and satisfaction at having a job, but at the same time felt discomfort and shame at working with nonwhites. I shall be referring to the events up to this point at the pre-proximity stage of the event pattern.

To continue with the illustration, Mr. White did the work on his new job speaking to a nonwhite co-worker, a Mr. Brown, only when the occasion demanded. Soon after beginning work, he inquired into the possibility of changing to another position at the airport and gave as his reason his dislike of working with nonwhites. His supervisor, who governed promotions and raises

in the section in which White and Brown worked, explained to him that it was not the policy of the airport to make distinctions on this basis and told him he either would have to stay in his position or leave the organization. White considered quitting but decided against it because the job was well paying, and he needed money badly to support his new wife. By the time he had been on the job for a while, he had noticed that other co-workers were friendly to Mr. Brown. Sometime later during a coffee break a second white co-worker suggested a visit to inspect a new type of plane which had landed at the airport for the first time. Mr. Brown, the nonwhite, went along. In the course of their inspection of the new plane, White and Brown discussed the innovations it contained. Events from the pre-proximity stage up to this point I shall call the proximity stage.

In the days which followed, White participated in other conversations in which Brown was involved. These conversations were like the first in that they dealt with events related to the business of the unit in which the two men worked. Sometime later someone within the section proposed the organization of a bowling team for competition against other airport units. Brown supported the proposal and joined the team. When the group turned to White, whom they knew to be a bowler, he joined also. Bowling on the same team involved efforts at mutual assistance among the team members, including White and Brown. It also involved partisan emotional backing for one another against opposing teams. Mr. White came to appreciate the value of Mr. Brown's work at the airport and his contribution to the bowling team. Also, he came to treat Mr. Brown in the same way as his other co-workers and told other friends he liked him. The events from the proximity stage up to this point I shall call the interaction stage.

As time went on Mr. White encountered the question of relations between whites and nonwhites in other settings. When asked by his friends what he thought of whites and nonwhites working together he said he approved. When asked why, he said he thought nonwhites were just as good workers as whites. When Negroes came to a political meeting he attended he introduced himself. Events such as these make up the post-interaction stage.

Time Stages in a Recurring Sequence of Events

Now let me review each of the four stages and describe each in somewhat greater detail. The first, the pre-proximity stage, covers the period in which the individual is still separated from the attitudinal object, the member of the group he dislikes. During this stage, environmental developments in conjunction with a variety of personal characteristics such as values and motives may bring him to take an action in apparent

contradiction to his unfriendly attitude, namely, an action which brings him into proximity with the disliked person. In the illustration above, the availability of the job opportunity, in conjunction with Mr. White's economic need, was the occasion for his unwilling movement into the proximity situation. As a result of his action, the individual may experience a variety of consequences; these will include rewards and satisfactions (e.g., a salary) associated with the inducement to take the action as well as unpleasant affective reactions (e.g., discomfort at his increased nearness to the object of his dislike).

The proximity stage begins when Mr. White goes to work. The environment of this stage will include the characteristics of the focal social object (the member of the disliked group) and the role or position of this person in the proximity situation. Some of these environmental features may, in association with the individual's motives and values, lead him to attempt to separate himself from nonwhites in the job setting. On the other hand, he will have an opportunity to observe the actions others take toward nonwhites and his work may lead to close observation of nonwhites' behavior. He will experience anticipations as to the consequences, both pleasant and unpleasant, associated with various actions on his part. As a result of some of these observations and anticipations, or as the result of unavoidable requirements of the situation, he may begin to interact with the members of nonwhite groups he at first avoided.

The third stage, the interaction stage, begins in the illustration with a conversation. Additional conversations and work associations develop with time. Sometimes, as in the bowling illustration, interactions develop that are not limited to the initial setting. One of the by-products of this interaction is to add new aspects to the environment which the subject individual experiences. For example, various aspects of the behavior and personal qualities of the nonwhite may be noticed. In addition, participation in the interaction may bring other consequences. For example, Mr. White may experience relief in acting in a manner approved by his supervisor and his white co-workers. At the same time, however, he may experience discomfort at being seen in close interaction with a nonwhite. His actions toward nonwhites in the situation may be such that one could infer his liking and admiration for them.

In the fourth, or post-interaction stage, we assume a further elaboration of the subject's environment, and especially of its attitude-relevant features. The subject meets new nonwhites and has new occasions on which to react to nonwhites as a class as well as to policies regarding nonwhites. If his actions now differ from what they were in the pre-proximity stage we may feel confident that he has changed in some way--in his

racial attitudes, presumably. If they do not differ we are uncertain what to assume. Our subject may have changed but his new attitude may not be strong enough to counter the disapproval he anticipates from friends and neighbors should he act accordingly. In other words, his attitude toward non-whites may be different but his actions may be determined by other considerations.

Event Theory as an Approach to the Study of Event Sequences

When the problem to be understood is defined as a recurring sequence of events, as is the case here, its analysis calls for an approach which I have referred to elsewhere (19) as event theory.

Since the task of event theory is to account for the various aspects of the event sequence, we need first a conceptual analysis of the sequence. That is, we need an interrelated set of concepts or variables which, taken together, describe the components of the phenomenon with which we are dealing. Accompanying this set of descriptive concepts or variables there will be hypotheses about relationships among them. As time goes on, the availability of verified hypotheses will suggest hypothetical mediating processes. These hypothetical processes in combination with the descriptive variables and the relationships among variables constitute the theory of the event pattern.

Event theory, although not unknown in social psychology, is used infrequently as a theoretical strategy. Most social psychological theories focus on single explanatory processes. Such theories feature a key hypothetical explanatory concept and utilize this concept in the explanation of any instance of social behavior to which it appears relevant. You will recognize these examples: social comparison theory, social evaluation theory, adaptation level theory, comparison level theory, reference group theory, and, most prominent of all, cognitive dissonance theory.

The most familiar example of event theory in social psychology is the body of knowledge related to persuasive communication. The pattern of events is usually described like this: A source emits a message; the message is transmitted through some communication channel to a recipient; the recipient, who may or may not be in the presence of others, reacts in some way to the message. In everyday life, this pattern recurs repeatedly, with many variations in the source, in the message, in the channel medium, in the personal attributes of the recipient, in the social environment of the recipient, in the recipient's reactions and in changes in the recipient's attitudes.

If we draw a parallel between the event pattern of persuasive communication and the event pattern centering around

personal contact with members of a disliked group we might say that the contact experience is analogous to the message and the member of the disliked group is analogous to the message source. The subject individual having the contact experience is analogous to the message recipient. Like the message recipient, his reaction to the message may be influenced by the presence of others. Since face-to-face contact is a constant in this event pattern, there is no parallel here to variation in the communication channel.

The investigator trying to build a theory for such a pattern of events has no expectation that he will find a single explanatory process to be sufficient. To the contrary, he formulates multiple working hypotheses about processes, anticipating that some aspects of the event pattern will be explained in one way and some in another.

The event theory approach has a potential advantage of some importance. If the event pattern has been abstracted from significant natural events, then the utility of the theory for the understanding and control of these events should be high. Those who work with unintended contact and behavior toward members of a disliked group hope that such theory as may be produced will prove applicable to the problems of racial desegregation and the as-yet-unrealized potential it offers for favorable changes in racial attitudes.

Outcome Variables in the Event Sequence

In the example illustrating the sequence of events with which we are concerned in this analysis, the cutting lines between time stages were chosen in such a way that each terminates with significant developments in the subject's behavior. For example, the behavioral outcomes of stage 1, the pre-proximity stage, are those actions which bring the subject into the desegregated setting. In stage 2, the proximity stage, the behavioral outcomes are the interactions between white and nonwhite. In stage 3, the interaction stage, they are the expressions of liking and respect for nonwhites who were encountered in the contact situation. In stage 4, the post-interaction stage, they are verbal and nonverbal behavior toward nonwhites in general and positions taken on policies regarding nonwhites as a social group. This wide range of behavioral developments (or outcome behavior) from accepting a job in an integrated setting through expressing liking for a formerly disliked person in that setting to advocating supportive social policies for the formerly disliked group--raises several conceptual and terminological issues which should be reviewed before undertaking the general conceptual analysis.

In dealing with behavioral developments which have attitudinal relevance it is helpful to distinguish among three concepts: (a) attitude-related behavior, (b) attitude, and (c) attitude indicators. Attitude-related behavior will be used to refer to any observable behavior (from autonomic responses to social action) for which it is reasonable to suspect that a specified attitude is a potential determinant. Attitude, by contrast, will be treated as a construct. As such, it may not be observed or measured directly; rather, its nature and strength must be inferred from observable behavior. The third concept, attitude indicator, will denote attitude-related behavior judged to be enough free of other determinants to be of value in assessing attitude direction and strength. Each of these concepts will be discussed briefly in the following paragraphs.

Attitude-Related Behavior

There are two quite different bases for interest in attitude-related behavior. The first is a concern for understanding the behavior itself; this concern is often related to a desire to understand or predict significant social action of which attitude may be one determinant. The second is the possible utility of the behavior as a data base for inferring attitude. The latter concern will be dealt with later in the discussions of attitude indicators.

As already indicated, attitude-related behavior may range from overt action and verbal behavior to perceptual and physiological responses. Within this range, however, certain types of behavior are of relatively greater interest. Where a disliked group is the attitudinal object, these types would include the following:

(a) Actions, friendly and unfriendly, toward members of the group, e.g., cooperating with or refusing to cooperate with a nonwhite in some task.

(b) Actions for or against supportive or oppressive social policies toward the group, e.g., voting for or against the employment of nonwhite teachers in formerly all-white schools.

(c) Action commitments of either of the above types, e.g., signing up for an interracial activity or signifying an intention to contribute to a civil rights action.

(d) Verbal exchanges with members of the group; e.g., epithets, accusations, praise, discussion of common interests, etc.

(e) Verbal statements of various sorts made in interviews,

on questionnaires or on rating scales. These take many forms: hostile-friendly, laudatory-derogatory, liking-disliking, accepting-rejecting. They include ratings of the attitudinal object on bi-polar evaluative adjectives (like those employed in the semantic differential technique) (77). They include also indications of intent to relate in specified ways to the attitudinal object [such as those in the Bogardus Social Distance Scale (5) or the Behavioral Differential of Triandis (94)].

(f) Other behavior, such as perceptual, projective, judgmental, emotional and physiological responses to stimuli involving the attitudinal object. Such behavior will be described more fully in the discussion of behavior which may serve as attitude indicators.

Attitude

The concept of attitude is employed in two ways in this analysis: (1) as one of the antecedents of behavior toward the attitudinal object and (2) as an attribute of individuals which may change in the course of experiences with the attitudinal object.

The major problem in dealing with attitude arises from the fact that it may not be observed directly. Whatever is to be known about it must be abstracted or inferred from observable reactions. This requirement makes it necessary to decide which reactions are to be considered relevant to attitude.

One criterion is generally agreed upon, namely, that attitudes differ from other attributes in having specifiable objects--in our example, the object is the social group, nonwhites. However, within the limitation to object-specific reactions there arises the further question of the type of reaction to choose and here there is much less agreement.

The choice of behaviors taken to be indicative of attitude is most often approached by formulating a definition of the concept. The number and variety of such definitions is apparently limitless. Three decades ago Nelson (74) was able to list 23 categories of attitude definitions. In his book, The nature of prejudice, Allport (1) lists more than 100 definitions. The modal behavior in the years following these publications has been for each writer to advance his own definitional variation.

DeFleur and Westie (25) provide a helpful clarification and condensation of this morass by reducing the many definitions to two major types. One of these they label probability conceptions, the other, latent process conceptions. They divide the latter into two sub-types: latent process and hypothetical construct.

Probability conceptions focus on two points: (1) the degree of consistency, i.e., the relative frequency of responses of a specified type given by a person to some specified class of stimulus objects (e.g., members of a social group or symbols representing it). (2) The fact that the frequency of favorable (or unfavorable) responses to the same stimuli in the same situations, varies from one person to another. In probability conceptions this relative frequency of designated reactions is identified as the attitude and serves as the measure of its direction and strength. No inference to any other entity is made. As DeFleur and Westie note, attitude is thus equated with the probability of recurrence of behavior forms of a given type or direction. Other labels attached to probability-conceptions of attitude are "response organization" and "enduring organization of response consistency."

Latent process conceptions of attitude share with the probability conceptions the emphases on consistency of response and on differences between persons in degree of consistency. (As will be noted below, there is, in fact, no functional alternative to such emphases). However, these conceptions take the additional step of postulating one of two types of inferred entity or underlying process. One of these is a hypothetical variable or construct of which the degree of consistency among observable responses is considered the best available estimate. The other is a latent or mediating state or process located within the individual.

Latent process conceptions lead to certain terminological distinctions not called for in probability conceptions, e.g., opinions designate observable verbal reactions while attitude designates the underlying process.

It is difficult to see how one could choose on logical grounds between these different conceptions of attitude. Whether or not in the current state of knowledge one goes beyond degree of response consistency to make an inference to underlying processes would seem to be a matter of taste. On the one hand, whatever is responsible for the probability of recurrence of certain reactions being higher in one person than another must, as the mediating process conception assumes, reside in the organism. On the other hand, as DeFleur and Westie note, whatever is responsible is "an unknown something" of no utility beyond the observable reactions from which it is inferred. If this situation is to change a different approach must be taken to attitude theory--namely, an approach of discovering the nature of attitude rather than one of determining it by definition.

Attitude Indicators

As noted above, attitude-related behavior constitutes the

pool of observable responses upon which the assessment of attitude must be based. Not all attitude-related behavior, however, is equally satisfactory for this purpose. Hence, investigators attempt, with varying degrees of clarity of purpose, to choose that behavior which is judged to be enough free of other significant determinants to represent attitude adequately. Instances of such behavior will be referred to here as attitude indicators. The development of a rationale for the selection of attitude indicators can be argued to be the basic problem of attitude theory.

Self-Descriptive Statements as Attitude Indicators

Most of the thought and effort on selecting attitude indicators in the past has been focused on verbal statements. This work has taken one of two directions: (1) Attitude estimates are derived from reactions to self-descriptive statements of affect toward the attitudinal object (e.g., good-bad ratings), or (2) Such estimates are derived from self-descriptive statements related to three attitudinal "components," namely, affect toward, beliefs about and behavioral intentions toward the attitudinal object.

Serious questions have been raised as to the adequacy of basing inferences regarding attitude solely on self-descriptive ratings and statements. The first, and perhaps most basic, has to do with the wisdom of limiting the pool of attitude-related responses to such statements to the exclusion of behavior such as actions, perceptions, memory, physiological reactions, etc. (10). The second concerns the likelihood that verbal statements will be strongly determined by non-attitudinal influences, such as situational expectations and self-conceptions as to what it is proper to think and say--thus making such statements poor attitude indicators. Alternative approaches designed to meet these objections will be presented later.

Definitional restrictions on the nature of self-descriptive ratings and statements used as attitude indicators. The investigator who infers attitude from self-descriptive ratings and statements must choose among many possibilities with respect to item type. As indicated earlier the two most common choices have been: (1) items indicating affect and (2) items indicating affect, beliefs and behavioral intentions. This reliance on the definitional designation of certain types of ratings and statements as attitudinally relevant has led to an unwise limitation of item types. In order to provide a less arbitrary basis for selecting items a number of investigators (7, 42, 53, 78, 94, 103) have factor and cluster analyzed verbal items. An illustrative outcome of such work is that one group of investigators (103) has produced evidence that statements expressing lack of self-consciousness in public interaction with the object group can be

used as an attitude indicator. Another group (7) have shown the same to be true of statements predicting greater effectiveness for one type of social policy than for an alternate policy equally supportive of the object group. Such statements would not have been considered previously because they did not fit categories specified by existing definitions of attitude.

Indirect attitude indicators. As noted above the general concern about the practice of basing inferences to attitude on self-descriptive statements alone, has led to numerous proposals to utilize other types of behavior as attitude indicators. The two most often named are overt action and physiological responses.

Efforts have been made to develop standardized procedures for both areas. Agreement to be photographed in interracial groups (20, 24, 62) and to meet with interracial groups (33) are two examples of indicators of the overt action type. Voting behavior among legislators is another (38). An example applicable to attitudes of groups is seating aggregation within or across social group lines (12).

A considerable number of investigators have studied physiological reactions to stimuli representing attitudinal objects. Most of this work has concentrated upon the galvanic skin reflex and, more recently, upon pupillary dilation. Mueller (72) has provided a useful summary of this work.

A Multiple Indicator Approach

The concern about limiting the choice of attitude indicators to self-descriptive statements and ratings has led to a second development, similar to but more extensive than that just described. This is the effort to find a "multiple-indicator" base for attitude estimation. Cook and Selltiz (21) have formalized this effort in their paper, "A Multiple Indicator Approach to Attitude Measurement." Summers (93), also, has made the approach explicit in his book of readings, Attitude Measurement.

Cook and Selltiz describe the multiple-indicator approach as follows:

"This orientation leads to emphasis on the need for a number of different measurement approaches to provide a basis for estimating the common underlying disposition, and to the expectation that data from these approaches will not be perfectly correlated. However, it seems to us that it should be possible to increase the correspondence among the indicators by careful analysis of other factors that are likely to affect response to a given measuring instrument

and by efforts to reduce or control the influence of those factors."

Summers, in the Preface to his book, puts his purpose thus, "The primary objective in assembling this collection of essays and previously published works is to encourage the emergence of a strategy of attitude research that builds upon a multiple data base." Both the Cook-Selltiz paper and the Summers book organize the approach to attitude indicators (behavior specimens in Summers' terminology) into five categories; these are (1) self-report, (2) observation of overt behavior, (3) reaction to partially structured stimuli, (4) objective tasks, and (5) physiological reactions.

The development of the multiple-indicator, multiple-data-base orientation to attitude estimation would appear to be a natural extension of earlier ideas on the measurement of personal attributes. Cook and Selltiz, for example, call attention to a point of view advanced by Lazarsfeld:

"Lazarsfeld (60) takes a similar position in his discussion of latent structure analysis. He points out that there is a probability relation between an indicator and the underlying trait of which it is taken as an indication; that is, a given trait does not invariably produce a given behavior. He stresses that, in consequence, some inconsistency will always be found between different measures of a hypothesized trait, and that the task of the investigator is to combine them into an 'index' or 'measurement' which represents the best inference that can be made from the manifold of empirical operations to the underlying characteristic they are assumed to reflect."

A rationale for the selection of attitude indicators. Cook and Selltiz, noting the need for a way of systematically organizing and studying possible indicators of attitude, propose subgrouping such indicators in terms of the nature of the inference one makes from the indicator to attitude. Self-reports, for example, share the inference that there is a direct correspondence between a person's attitude and what he says about the attitudinal object; this depends upon two prior inferences that (1) he is "aware" of his attitude, and (2) reports it without distortion. By contrast, a very different inference is made from performance on an objective task (e.g., learning and remembering attitude-related material); this is that a systematic bias in performance reflects the influence of attitude.

Cook and Selltiz introduce a second consideration cross-

cutting the first. Noting that attitude-related behavior is useful as an attitude indicator in proportion to its freedom from non-attitudinal determinants, they explore systematically the "susceptibility to other influences" of each subgroup of attitude indicators. Where possible they propose ways of minimizing such influences and maximizing that of attitude.

To these aspects of a rationale for selecting attitude indicators, Summers (93) adds another: The likelihood that the attitude indicators selected are coordinate with attitude should be checked by application of the Campbell-Fiske multitrait-multimethod matrix (11). In discussing the problem of developing confidence that a given trait is measured as conceptualized these authors argue for the use of maximally independent measurement procedures. They feel the investigator must assure himself of several things: One is that the trait concept may be incorporated into several different measuring procedures which are found to correlate with each other. Another is that the measurement procedures are sufficiently different so that the correlation cannot be attributed to common "methods variance," i.e., be due to individual differences in the way the subjects react to two tests using a similar method. To achieve assurance on this latter point Campbell and Fiske proposed a procedure (the multitrait, multimethod matrix) which involves determining whether the correlations of tests of a given trait using different methods are higher than the correlations of tests of two different traits using the same method.

Taken together, the several considerations noted up to this point may serve as a first approximation to a rationale for the selection of attitude indicators. They are as follows:

- (a) Responses selected should be those that are directed toward a specified social object.
- (b) Responses selected should be loosely interpretable as reflecting evaluation of, affect toward or arousal by the attitudinal object (pro-con; like-dislike; approach-avoidance; arousing vs. non-arousing; performance detracting vs. non-detracting; judgment biasing vs. non-biasing, etc.).
- (c) Responses should be chosen so as to include a wide range of types of inference from the nature of observable behavior to the nature of attitude.
- (d) The influence of non-attitudinal determinants on the responses selected should be analyzed and data collection procedures that minimize them should be developed.

- (e) The validity of the responses as indicators of attitude should be established, either in criterion validity or construct validity terms. If the latter, the multi-trait-multimethod matrix should be applied where possible.

Interrelations of Attitude-related Behavior, Attitude and Attitude Indicators

Against the background of the preceding discussion it may be of value to restate the interrelations among the three attitude-relevant conceptions to be utilized in the conceptual analysis to follow:

Attitude-related behavior is encountered at points in the event sequence which mark the separation between time stages. Attitude may or may not be an important antecedent of such behavior. To understand when this is the case and when it is not, is one of the purposes of our analysis.

Some types of attitude-related behavior, on the other hand, may have characteristics that permit their use as attitude indicators. From such behavior we infer attitude and, when we do so for the same person at two points in time, we make a further inference to attitude change. Whatever definition of attitude we favor (whether probability of recurrence of observable responses, or inferred hypothetical construct, or inferred latent variable functioning as a stimulus-processing attribute within the individual) we must have a systematic rationale for selecting from among available observables those to be examined for response consistency. This need is no less great for probability conceptions than for latent process ones.

THEORETICAL STATEMENT: A CONCEPTUAL ANALYSIS FOR A MULTI-
VARIATE THEORY OF ATTITUDE-RELATED BEHAVIOR
AND ATTITUDE CHANGE

A theoretical orientation with multivariate and interactional characteristics has been widely advocated in recent years. In 1969 alone there appeared seven papers or book chapters taking this position and suggesting components to be considered (19, 31, 47, 52, 54, 96, 100).

Early students of attitude had abstracted the attitude concept from the observation of consistent individual differences in what people did about important social problems. For them it was obvious that attitude was a significant determinant of action. Cautions regarding this assumption began to be raised in the 1930s and 1940s (29, 59, 67). The year 1949 saw the publication of an issue of the Journal of Social Issues devoted to the problem (15). As indicated by the title, "Consistency and Inconsistency in Intergroup Relations," the problem was raised in terms which took for granted a lack of relationship between attitude and related action--although not all of the contributors accepted this premise.

The 1950s saw a number of writers make the shift in focus from attitude to attitude-related action and begin to ask what factors other than attitude influenced such action (4, 17, 44, 57, 63, 84). These writers agreed in emphasizing non-attitudinal determinants.

Interest in a theoretical re-orientation continued to accelerate and the period 1960-69 saw major contributions accumulate. Papers and books by the following are noteworthy: Himmelstrand (46); Fishman (36); Rose (85); Allport (2); DeFleur and Westie (25); Williams (101); Yinger (104); Deutscher (27, 28); Fishbein (34, 35); Fendrich (33); Insko and Schopler (48). Many of the papers and books in this group of publications represent major research and theoretical contributions treated in multivariate and interactional terms.

The rising interest in understanding the multiple determination of attitude-related action is complementary to the long-standing interest in the determinants of attitude change. There is a large area of overlap in the variables of interest to the two research problems. The cumulation of evidence regarding empirical relationships and explanatory processes in this area of overlap should benefit from the availability of a comprehensive framework of concepts. The concepts enumerated here constitute a first step in providing such a framework.

Overview of the Components of the Conceptual Network

At this point I shall give a brief overview of the conceptual network and illustrate its application by reference to the example given earlier of Mr. White's experience with interracial employment. The broad categories of the network are shown on the top line in Figure 1. As will be seen there, some of the concepts to be employed describe environmental influences affecting the individual under study; these will be discussed under Environmental Variables. Others describe the individual himself; these are to be discussed under Person Variables. As noted in discussing the time stages of the event sequence, it is assumed that the joint effect of environmental and person variables is to move the subject-individual into the interracial contact situation and later to lead to interaction with nonwhite persons encountered there. The characteristics of this interaction (as distinct from its affective and behavioral outcomes) are discussed under Interaction Variables.

The joint effect of environmental variables, person variables, and interaction variables is to be seen in the Behavioral Variables, e.g., in the subject-individual's behavior toward persons in the contact situation, in his private evaluative reactions to them, and in his behavior to other members of the disliked group encountered later outside the contact situation. The Behavioral Variables, taken together, constitute what is referred to in the title of the theoretical statement as attitude-related behavior.

The antecedent conditions determining the nature of the subject's attitude-related behavior may lead also to new attitudes. Such a development, however, must be inferred from observed behavior; this is discussed under Attitudinal Variables.

To summarize, the broad categories in the conceptual network are environmental variables, person variables, interaction variables, behavioral variables and attitudinal variables. There are, in addition, three less prominent but equally necessary groups of variables (see second line of Figure 1). One of these is Environmental Variables as Perceived; these are variables which result from the processing of "objective" environmental variables through the interpretive processes provided by the perceiver's personal attributes. A second is Anticipated Consequences of Association with the Attitudinal Object; as will be seen the interplay of environmental and person variables gives rise to expectancies of either pleasant or unpleasant experiences and outcomes in situations involving contact with nonwhites. The third is Consequences of Interaction; what follows by way of gain and satisfaction from interaction varies greatly and may partly determine later behavior toward the attitude class as well as attitude change.

Environmental Variables	Person Variables	Inter-action Variables	Behavioral Variables	Attitudinal Variables
	Anticipated Consequences of Association	Consequences of Interaction		
	Environmental Variables as Perceived			

Figure 1

Environmental Variables

These variables are further subdivided into focal environmental variables, situational characteristics, trans-situational influences, and activating, coupling and guiding events (see Figure 2).

Focal Environmental Variables

Focal variables refer to (1) characteristics of the focal attitudinal object--i.e., of members of the disliked group who are present to the situation--and to (2) features of the situation directly involving the focal attitudinal object.¹ An example of the former would be the nonwhites' socio-economic-educational status. An example of the latter would be their status in the situation relative to that of the white participants. Where members of a disliked group are the focal attitudinal stimuli, variables describing the disliked group are generally given values relating their characteristics to those of the subject-individual. For example, the variable, socio-economic-educational status, is characterized as higher, equal to or lower than that of the white subject.

An example of a variable that describes a feature of the situation directly involving the nonwhite is his status within the proximity situation relative to that of subject. In our airport example, Mr. Brown's work was similar to that of the whites with whom he worked; he would be described, in relative terms, as having equal status in the contact situation.

Additional focal environmental variables of interest to this analysis are listed in the Appendix.

Situational Characteristics

Focal stimuli are always experienced in the context of other aspects of the environment. In our airport example, the disliked person is experienced in a context of work activities and other persons. Some of these contextual features, such as Mr. White's airport supervisor, may become quite influential in governing the subject-individual's actions toward and statements about individuals from the disliked group. This contextual environment is commonly labelled, the situation. Its features are designated situational characteristics (Figure 2). For several decades

¹Blake, Helson and Mouton (3) and Helson, Blake and Mouton (44) speak of focal and contextual situational factors in a manner similar to that used here.

Environmental Variables			
Focal Environmental Variables	Situational Characteristics	Trans-situational Influences	Activating, Coupling and Guiding Events
<u>Characteristics of Nonwhite</u> Correspondence to stereotype Valued traits Task competence Similarity of belief Relative socio-economic-educational status	<u>Social Characteristics</u> Sources of social approval Sources of material reward Attitude-relevant opinions expressed <u>Non-social Characteristics</u> Physical proximity Acquaintance potential Interdependence requirements Expectations re interracial association Competence requirements	Views of significant others Norms of reference groups Role expectations Laws and regulations	Norm-activating event Action-guiding event Norm-action coupling event
<u>Situational Features Involving Nonwhite</u> Relative situational status Proportion of nonwhite			

Figure 2

sociologists and psychologists have stressed the point that attitude may not be uncritically inferred from expressed opinion because of the effect of situational influences on opinion statements (e.g., 4, 17, 27, 28, 34, 68, 83, 84, 85).

Situational characteristics may be usefully subdivided into their social and non-social aspects. Social characteristics of the situation involve persons other than those in the disliked group. Concepts describing the social aspects include:

(1) Sources of potential social approval-disapproval (e.g., significant others, representatives of one's reference groups, authority figures, strangers, etc.). See Appendix for detail.

(2) Sources of potential material reward-punishment (e.g., employer, police, parent, teacher, etc.).

(3) The nature of attitude-relevant opinions expressed in the situation by such sources (e.g., 79).

In our example, a source of social approval-disapproval would be illustrated by Mr. White's airport co-workers. A source of material reward-punishment is exemplified by the airport supervisor who controlled his salary. Presumably, the influence of such persons comes into play only in conjunction with associated needs and apprehensions characterizing the subject-individual. These will be discussed under Person Variables.

Concepts describing the non-social aspects of the situation refer to a number of its features other than its social components. Among these are:

(1) The physical proximity between white and nonwhite provided by the situation. To illustrate, in a housing project nonwhites and whites may live as next-door neighbors having apartments within the same building; or they may live in separate buildings interspersed throughout the project; or they may live in separate sections of the project (102). In Mr. White's airport job, the physical proximity is at a high level; whites and nonwhites work in the same area.

(2) The acquaintance potential of the situation. This is the extent to which the situation provides opportunities for getting to know members of the other race as individuals. Sitting next to a nonwhite on a bus or in the theater or swimming at the same beach is not usually conducive to getting acquainted with him. Living next door to a nonwhite family, belonging to a small club that has both white and nonwhite members, or being on a team with both whites and nonwhites provides more opportunities for becoming acquainted with individuals of the other race.

(3) The interdependence requirements of the situation. This is the extent to which the structure of the situation itself fosters cooperative activity. Membership on a team requires interdependent cooperative behavior if the team is to win; working as sales clerks in the same department in a store in which pay depends on the amount of sales and only the most successful clerk gets a bonus is likely to engender competitive behavior; an activity that is essentially individual, such as handicrafts, is neutral with respect to this variable (26).

(4) Situational expectations regarding interracial association. Authority figures, e.g., an employer, in the situation may have defined proper actions (55) or informal custom may have "patterned" the behavioral expectations (57).

(5) Competence requirements of the situation. Situations differ in the value they place on different abilities and skills. The importance of this is that it may lead to acceptance or rejection of nonwhites based upon their possession of the situationally valued competence, e.g., mining knowledge among non-white mining foremen (71).

Trans-situational Influences

By contrast with situational characteristics, trans-situational influences are those environmental variables which may influence one in any situation into which he moves. The moral standards of one's parents, or the behavior expected of persons in certain roles, e.g., of ministers or priests, represent examples of such variables. In seeking a job at the airport Mr. White was aware of a trans-situational reference group norm; namely that his white neighbors had views opposing whites and Negroes working together. It should be noted that a trans-situational influence may or may not be of consequence in a given situation depending on its activation in that situation. This will be discussed more fully under Activating, Coupling and Guiding Events, below.

Four categories of trans-situational factors may be identified (Figure 2):

(1) Views of significant others (family, friends, respected leaders, etc.). For example, when college students consider participating in public protests or in interracial activities they are influenced by anticipation of what their parents might think of the activity in question (13, 62).

(2) Norms of reference groups (community, ethnic, peer, membership, clubs, and gangs, etc.). Many studies support the point that viewpoints accepted by one's reference groups influence one's words and deeds, often in a direction counter to

one's own inclinations. Evidence is available for college communities (32, 75, 80), peer groups (24, 62, 96), and membership groups (64, 91).

(3) Role requirements or expectations. The fact that one may act, and eventually come to believe and feel, in ways consistent with the formalized requirements or informed expectations associated with an occupation, a leadership position, a group representative, etc., has been well established (61, 68, 88, 95).

(4) Laws and regulations. An example is that actions, such as discrimination, are sometimes constrained by the fear of sanctions prescribed by law (56).

Activating, Coupling and Guiding Events

The fourth type of environmental variables are activating, coupling and guiding events (Figure 2). Such events function to relate situational characteristics and trans-situational influences to reactions to the attitudinal object. The presence in the situation of some potential source of gratification or punishment, for example, has no inherent relationship to the subject's actions toward the person from the disliked group. Something must happen to engage the source and the action. For example, in our illustration there was no relation between Mr. White's pay check and equalitarian behavior toward Mr. Brown until Mr. White's supervisor made a statement connecting the two. Thereafter, need for the money played a part in White's actions.

A norm-activating event is illustrated by the following: A member of a group, e.g., a labor union, endorses or at least conforms to the group's position against racial discrimination while on the job. However, in a non-work setting involving non-whites his union membership may not be salient. The coming of a union leader to this setting may reinstate the union's salience and "activate" or mobilize norms associated with his union membership, causing the union member to act in the non-work setting in the same way he does in the work setting. A reminder from a friend or associate regarding one's religious affiliation or a warning that one's social group will learn of one's actions could have a similar norm-activating effect (14, 96).

In some cases an event may not only activate a relevant norm or role commitment, but also relate the norm to the direction that behavior should take in the situation. For example, a union leader may, after making salient the union and the union's anti-discrimination norm, point out that certain actions in the recreational setting would be discriminatory. Such a statement would "couple" the union's normative influence to certain types of action toward the attitudinal object (79, 82).

Other coupling events are made up of observed relationships between particular actions toward the disliked group member and various pleasant or unpleasant consequences. An observation that persons who participate in recreational activities with nonwhites are thereafter avoided by their former friends offers a case in point (57).

The latter example, as well as the earlier one in which Mr. White's supervisor made the continuation in his job contingent on equalitarian relations with Mr. Brown, not only "couple" a social sanction or a material need to attitude-related behavior but also "guide" the direction of the behavior. In other cases the coupling exists but the subject-individual must search for action-guiding cues. He might, for example, wait to see how a club to which he wished to belong treated nonwhites.

Environmental Variables as Perceived

Environmental concepts may be thought of either as describing objective reality or as describing the environment as perceived. Personal attributes such as attitudes, needs and fears lead us to misperceive our environment. Hence, a given value of a specified environmental variable should take different forms when filtered through the perceptions of different individuals. Strong social attitudes, for example, are notable for influencing perception of relevant attitudinal objects. Mr. White, we may guess, at first experienced Mr. Brown as having some of the stereotyped traits he expected to find in nonwhites.

It is often the case that investigators fail to make the distinction between actual and perceived characteristics. What is measured as a perceived norm or as perceived reference group support may be reported instead as an objective variable. Looseness of interpretation results since effects attributed to environmental variables in such cases are due partly to those personal attributes of the research subject which colored his perceptions.

Person Variables

It is convenient in this analysis to think of the person variables in two groups: (1) those attributes which are related to the focal environmental variables, for example, a characteristic of the subject such as attitude which might be expected to influence directly his relations with nonwhites; and (2) those attributes not so related, for example, needs and values of the subject which make him responsive to trans-situational influences or to features of the situation other than those involving nonwhites.

The former are designated as focal attitudinal attributes

and the latter, general subject attributes.

Focal Attitudinal Attributes

In an analysis of attitude-related behavior, the person variable related most directly to the various stimuli representing the attitude object is, of course, the attitude construct itself. The manner in which the attitude construct will be used in the present analysis has already been examined under General Theoretical Considerations. To summarize, it is a variable inferable from consistency of response to a given social object--a type of response which is identified loosely as pro-con, evaluative, or approach-avoidant. A more precise characterization of the construct awaits discovery of its characteristics; these will not be supplied through the formulation of new definitions.

As noted in the discussion above individual differences in attitude strength must be inferred from variation in observable behavior. Such behavior is typically observed, or "measured," by means of a standardized data-collection procedure. Such measurements serve as attitude indicators (Figure 3). Depending upon the attitude definitions being employed, the attitude indicators may be thought of either as identical with attitude or as a basis for inference to it. In either case, they serve as the only available basis for estimating attitude direction and strength. Since attitude indicators have been discussed earlier they need not be discussed again here. A categorization of potential attitude indicators is given under Attitudinal Variables, to follow.

Most students of attitude are convinced that attitude direction and strength are alone not sufficient to explain observed variation in the part played by attitude in determining attitude-related behavior. Two additional variables often thought to be important in moderating the effect of attitude are (1) ego-involvement in the attitude and (2) attitude centrality. A rough approximation to the meaning of both variables is the feeling that the topic of the attitude is important or significant.

Criteria of ego-involvement offered by Sherif and Sherif (92) are the kinds of public activities a person engages in (e.g., organizations belonged to) and his rankings of topics (e.g., for the amount of time spent talking about).

Ego-involvement and attitude centrality are not to be confused with superficially similar considerations such as extremity, intensity and certainty or degree of conviction of belief. Whether ego-involvement can be empirically separated from these various ideas (so that a given person scores higher on one than on another) remains to be seen. Partly because of the potential predictive significance of the attitude involvement concept and

Person Variables			
Focal Attitudinal Attributes		General Subject Attributes	
Attitude Concepts	Attitude Indicators	Attribute Concepts	Attribute Indicators
Racial attitude	Action tests	Needs and motives	Social desirability
	Ambiguous stimuli tests	Approval motive	T.A.T.
	Performance tests	Affiliation need	T.A.T.
	Judgment scales	Achievement need	
	Classification tests	Economic need	
	Perceptual measures	Personality traits	Trait rating
	Autonomic measures	Self-esteem	Manifest Anxiety subscale
	Self-report measures	Anxiety	F subscale
		Ego-defense	F scale
		Authoritarianism	
Ego-involvement in racial attitude		Values	Value self-rating
		Justice	Value self-rating
		Religious brotherhood	Value self-rating
		Government by law	Value self-rating
		Attitudes-other objects	Attitude scale
		Morale and perspective	
		Downward mobility	Ladder scale
		Status striving	
		Role commitments	
	Own categories procedure	Type	
		Strength	
		Action capabilities	
		Economic	
		Information-skill	
		Cognitive characteristics	
		Concrete-abstract	This-I-Believe
		Complex-simple	Role Play Test
		Open-closed	Dogmatism Scale

Figure 3

partly because Sherif and Sherif provide procedures for its measurement (e.g., the own-categories procedure) it has been included as one of the focal attributes.

General Subject Attributes

Person variables other than focal attributes include a wide range of subject characteristics of potential value in understanding attitude-related behavior. They may, in interaction with trans-situational or situational variables, determine behavior toward the attitudinal object. Thus, a need for social approval (a "general" subject attribute) in conjunction with a situational source of social approval (a situational characteristic) may help to produce a hostile reaction to a policy proposal favoring nonwhites, provided, of course, that coupling and guiding events make it clear that such opposition is approval-getting behavior.

The category of general subject attributes, defined in this way, is indeterminate in scope. Any person variable might, under some circumstances, be included. Nevertheless, we may identify certain attributes of more than average significance for attitude-related behavior. Among these attributes are needs and motives (e.g., social approval), personality traits and mechanisms (e.g., self-esteem), values (e.g., justice), attitudes to other objects than the one focal to this analysis (e.g., a religious group) morale and future perspective (e.g., downward mobility), role commitments (e.g., to enforcing the law), action capabilities (e.g., knowledge of a subculture) and cognitive characteristics (e.g., concrete vs. abstract cognitive structure) (Figure 3). To illustrate from Mr. White's experience, his first optional association with Mr. Brown might have come about partly as a result of an opportunity for him to satisfy his affiliation need through being included in a group of other white workers. When some of these workers invited Mr. White to accompany them to visit the new airplane we might imagine that, in his newness at the airport, the anticipated positive consequences of this invitation loomed large. By comparison, the negative import of associating more closely with Mr. Brown was outweighed.

Like the attitude construct, the subject attributes are concepts abstracted from observable behavior. Attribute indicators, typically in the form of standardized tests or ratings, are included in the current analysis in an effort to communicate more exactly the nature of the inferred attribute.

In order to illustrate the place in the analysis of general subject attributes and their interaction with situational characteristics, several examples are discussed below. Those chosen make up the categories, "needs and motives," and "personality

traits and mechanisms."

A. Needs and motives. The first attribute in this group is the approval motive. The strength of the variable is often inferred from scores on the Crowne-Marlowe Social Desirability test (23).

Given certain situational characteristics, subjects with a strong need for approval might be expected to interact more readily with a disliked person than might one with a lesser need. Among such situational characteristics would be an authority figure supporting equalitarian interracial association.

The second attribute is affiliation need. The strength of this variable is inferred from the Thematic Apperception Test (73) as well as from other instruments. Like the approval motive, it may be expected to interact with the expressed opinion of a source of social approval. Should cooperative interaction with the nonwhite come about, affiliation need should partially determine the influence of such interaction on the amount of social attraction the subject develops for the nonwhite.

It should be noted at this point that high need does not always have more effect than moderate and low need. It may happen that, as seems to be the case with affiliation need, moderate need produces the greater effect (8, 43).

The third attribute is need-achievement. The Thematic Apperception Test is the usual basis for inferring the strength of this variable but other tests of the need are also available. Here the interplay with the situation should be most evident in relation to its interdependence requirements and the competitive or cooperative interaction to which this gives rise. In particular, the strength of need-achievement in relation to successful cooperative interaction should influence liking for the nonwhite participant.

The fourth attribute is economic need. Strength here is estimated from ratings, usually made by the experimenter. Here the interaction with situational variables is by way of the source of material reward, and as I have noted already, it is this type of motive in conjunction with an appropriate incentive in the situation that we assume brings the prejudiced subject into the contact setting and keeps him there during the proximity stage of the sequence of events.

B. Personality traits and mechanisms. The first of these attributes is self-esteem. Strength here is inferred usually from self-ratings or Q-sorts of valued traits. The interplay of self-esteem with situational factors in inhibiting or facilitating

participant interaction, for example, is assumed to parallel that for affiliation need. Low self-esteem may be a characteristic that magnifies the need-affiliation effect.

The second of the trait concepts is anxiety. Amount of chronic anxiety has been inferred from test scores (Miller Anxiety Scale, for example), as well as from self-ratings and projective techniques. Anxiety level can be expected to have complex interactions with situational variables and with other subject attributes (65). For example, high anxiety in conjunction with negative racial attitude may tend to enhance avoidant behavior, in particular when the situational variable--proportion of nonwhites-is at a high value. By contrast, when anxiety level interacts with expressed opinions of a peer and a peer group source of social approval, high anxiety may contribute to enhancing white-nonwhite interaction and social attraction by the white for the nonwhite participant.

The third of the trait concepts, ego-defense, is, of course, usually labeled a psychological mechanism. However, it is a trait in the sense that individual differences in amount or strength are always assumed. The strength of the trait may be inferred from scores on the ego-defense subscale of the F scale. As an example of the interplay of ego-defense level with situational factors, it may be that low ego-defense will enhance the belief changes that result from exposure to favorable characteristics of the nonwhite in the situation.

Anticipated Consequences of Association with the Attitudinal Object

In the earlier discussion of environmental variables as perceived it was noted that a subject attribute like racial attitude may modify the perception of environmental variables. At this point in the analysis we encounter another such effect, namely that a negative attitude toward a social group arouses expectancies that associations with members of that group will be unpleasant. Racial attitude implies for a white subject-individual a tendency to approach or avoid nonwhites. Nonwhites, or events or symbols associated with them, when experienced give rise to pleasant or unpleasant affective reactions. Expectancy of such reactions becomes part of the pattern of determinants of attitude-related behavior.

However, the consequences anticipated from entry into a situation where interracial association might occur may well be a mixture of pleasant and unpleasant. For example, because of his economic need Mr. White looked forward to his airport employment with pleasure at the same time he dreaded its interracial aspect. Attention to the balance of anticipated consequences antedating

an instance of action or of position-taking on matters of policy should be helpful in understanding the response observed.

Interaction Variables

At some point in an event sequence involving unintended interracial contact, interaction between whites and nonwhites may develop. This may be viewed as a joint consequence of the environmental and personal variables just reviewed; as such it constitutes a behavioral development completing the proximity stage in the event sequence described earlier. Also, however, the developing interaction constitutes an addition to the environment of the subject-individual. (This constitutes the interaction stage in the event sequence.)

Considered as an aspect of the environment two dimensions of interaction stand out. The first of them is the degree and type of interdependence (26). At one end of this dimension is cooperation--complete interdependence with a common goal and a shared fate. At the midpoint of the dimension is complete independence. At the other extreme is competition--interdependence in the sense that if one wins the other loses. The interdependence aspect of interaction is closely related to a feature of the contextual environment, namely, the interdependence requirements of the situation. These may be such as to require given types of interaction or, conversely, to make any interaction difficult. Hence, any inference from the strength of the interaction to the strength of the subject's racial attitude should be made with care.

The second dimension of interaction is its degree of intimacy. This is largely a function of the nature of the conversation and information exchange that develops. The dimension ranges from personal and intimate to impersonal and public. A number of situational variables may facilitate intimacy of interaction. One of these is high acquaintance potential of the situation. Others are equality of situational status, equality of socio-economic-educational status and similarity in beliefs and interests.

Where the interaction involves coping with a group task, a third dimension may be identified. This is the relative contribution made by the subject and the nonwhite to solving or accomplishing such tasks (51). Focal environmental variables which might influence this dimension of interaction are the relative educational status of the nonwhite and his relative status in the contact situation.

Consequences of Interaction

We might anticipate that persons experiencing different types of interaction would be affected by them differently. Cooperative interdependence leading to mutual gain for the participants could prove satisfying while competitive interdependence leading to failure might have the opposite effect.

Two types of interaction consequences may be distinguished: The first is affective in nature. The subject-individual may feel that the interaction experience was positive or negative--or neutral. It may have seemed satisfying or frustrating. It may have led to success and been accompanied by material gain, or have resulted in failure and been accompanied by material loss. Such affect might become attached to the participants in the interaction or influence behavior toward them in other ways.

A second consequence of interaction is cognitive in nature. The subject-individual may come to know members of the disliked group as individuals, differentiating them from the group stereotype he formerly held. In the course of this he may discover many unanticipated similarities to himself and learn of shared motives, aspirations, anxieties and apprehensions. A possible consequence of this for later behavior might be to weaken the tendency to stereotype other members of the disliked group.

Behavioral Variables

This aspect of the conceptual analysis deals with behavior which is assumed to be the joint outcome of the environmental, interactional and personal variables reviewed above. This behavior was discussed under the heading of Outcome Variables in the Event Sequence in the section on General Theoretical Considerations. As noted there we may think of the white subject's behavior as shifting focus with time. Initially his behavior is oriented toward the contact situation itself; i.e., at the end of the pre-proximity stage he enters or avoids the setting in which he will experience proximity to nonwhites. Later his behavior is directed toward nonwhites in the contact situation; e.g., at the end of the proximity stage this takes the form of interaction with or avoidance of these nonwhites. Finally, in the post-interaction stage the object of his behavior is representatives (and symbols) of the attitude object class other than those encountered in the contact situation.

It may be seen from this overview of outcome behavior that we should examine it in three categories. The first is behavior related to the contact situation. The second is behavior toward nonwhites encountered in the contact situation; this is labeled "behavior toward the focal attitudinal object." The third is

behavior toward other nonwhites, those not encountered in the contact situation, and toward pictorial and verbal symbols of nonwhites; this will be labeled "behavior toward the attitude-object class."

Behavior Related to the Interracial Contact Situation

Sometimes, as in the case of Mr. White and a job opening at the airport, the alternative reactions of a white person to an interracial situation are to enter it or not to enter it. At other times a situation of which the subject individual is already a part becomes interracial; here his alternatives are to accept and remain or reject and leave. These combine to illustrate a dimension of reaction which we may label as participate-not participate. A second dimension of reaction runs from endorsement of interracial association through indifference to opposition. The wide variation in positions taken along this dimension has become familiar in the recent decade of enforced desegregation.

Behavior Toward the Focal Attitudinal Object

The behaviors which whites show toward nonwhites whom they encounter in contact situations include both interaction (or avoidance) and post-interactional evaluation. Such behaviors may be sub-grouped into categories such as "behaviors showing respect or disrespect." In doing this, however, we are in danger of making unwarranted inferences from the category labels to the subject's feelings about the nonwhites contacted or to attitudes toward nonwhites in general. An instance of "behavior showing respect for a nonwhite acquaintance" might, in fact, either show a feeling of respect by the subject-individual for the acquaintance or be evoked by environmental influences in the situation in which the "respectful behavior" was observed. To determine which of these two is the case raises questions of inference that go beyond the categorization of the behavior itself.

Any one of the categories below may include instances from a wide range of behavior types: friendly actions, supportive actions, action commitments, verbal communication, evaluative ratings and statements, etc. Some examples follow:

(a) Attraction-aversion behaviors, e.g., verbal communications, e.g., that initiate or accept invitations to associate; ratings of liking-disliking; preference ratings for or against sharing activities; choice for or against as a group member, or as a friend; positive-negative emotional arousal in the attitudinal object's presence.

(b) Support-opposition behaviors, e.g., actions to help or impede, to cooperate with or refuse to cooperate with, to support or not support, etc.

(c) Social intimacy-social distance behaviors, e.g., verbal communication about personal and intimate vs. impersonal topics; interaction in activities one usually engages in only with friends vs. those carried out with superficial acquaintances.

(d) Respect-disrespect behaviors, e.g., talking to nonwhites an equal proportion of the time in a racially mixed group; seeking opinions and advice from; choosing for or against as a work team member; ratings of ability, of contributions made, of effort made, of leadership.

(e) Attributions of desirable vs. undesirable characteristics, behavior and intentions, e.g., actions and verbal statements assuming, without evidence or with inadequate evidence, the possession of negative characteristics such as lack of effort, misbehavior, intention to defraud, etc.

Behavior Toward the Attitude-Object Class

In the post-interaction stage behavior toward members of the disliked group, or to symbols of the group, will occur outside the contact situation. From such behavior, change in social relations with nonwhites as a class may be assessed and, under some conditions, change in racial attitude inferred.

The behavior dimensions listed in the previous section apply equally well here. However, since in addition to persons, the attitude class consists of pictorial and verbal symbols, the range of behaviors to be included must be broadened to include behavior to such attitude-class symbols. Thus, attraction-aversion or respect-disrespect may be exemplified by reactions to pictures of nonwhites and to verbal labels of nonwhites as well as to nonwhites in person. Similarly, support-opposition may be exemplified by positions taken on social policies relating to nonwhites.

Attitudinal Variables

The behavioral variables just discussed fit the description of what is being called in this analysis, attitude-related behavior. That is, all are observable behaviors for which it is reasonable to suspect that a specified attitude (here, racial attitude) is a potential, though not necessarily an actual, determinant. One of the three groups of variables, namely, "behavior toward the attitude-object class," is much more likely than the others to include attitude indicators, i.e., attitude-related

behavior judged to be enough free of other determinants to be of value in assessing attitude direction and strength. The likelihood that reactions to participating in interracial situations or reactions to nonwhites encountered within the situation will be free enough of non-attitudinal influences to serve as attitude-indicators is much less. The reason for this, of course, is that such reactions are more likely to be influenced by situational influences, non-attitudinal needs and motives, attributes of the particular nonwhites encountered, etc.

From among behaviors toward the attitude-object class investigators attempt to select those behaviors most useful as attitude-indicators. Several approaches to this effort were described in the earlier discussion in General Theoretical Considerations. One, a multiple-indicator approach (21) proposed a number of behavior categories each of which has in common a given type of inference made from observed behavior to attitude. A revised list of these categories (18) is given below and under Attitudinal Variables in Figure 4. It should be noted here that this list goes beyond behavior toward the attitude-object class to include behaviors not directed specifically at nonwhites. For example, one category, adequacy of task performance, involves the learning of and memory for attitude-related material; here the inference to attitude is made from the relative effectiveness of learning and remembering materials, some of which are congenial to negative and some to positive racial attitude.

(a) Measures based upon overt behavior toward the attitudinal object. A direct correspondence is assumed between attitude and the direction and strength of reactions to representatives of the object class or to concrete instances of anticipated relationships with such representatives.

(b) Measures based upon interpretation of and reaction to incomplete or ambiguous stimuli. Here it is inferred that when responses are not guided by the stimuli being responded to, as must be the case when the stimuli are incomplete or ambiguous, then one's responses are guided by his own disposition toward the object class.

(c) Measures based on the adequacy of task performance. A person may perform relatively better upon materials which are congenial to one attitudinal position and relatively worse on materials congenial to the opposite attitudinal position. The inference is that this difference reflects the influence of attitude.

(d) Measures based upon judgments of attitudinally relevant material. It is assumed that differences between persons in judgments about attitudinally relevant statements, e.g., about

Behavioral Variables			Attitudinal Variables	
Behavior related to the contact situation	Behavior toward the focal attitudinal object	Behavior toward the attitude-object class	Attitude concepts	Attitude indicators
Participate vs. not participate Endorse-oppose	Attraction-aversion Support-opposition Intimate-distant Respect-disrespect Desirable-undesirable attributions	Attraction-aversion Support-opposition Intimate-distant Respect-disrespect Desirable-undesirable attributions	Racial attitude	Action tests Ambiguous stimuli tests Performance tests Judgment scales Classification tests Perceptual measures Autonomic measures Self-report measures

Figure 4

their convincingness as arguments, are due to the "anchors" or reference points established by one's own attitude.

(e) Measures based on choice of classificatory principles. The inference here is that when an individual has available to him a number of possible ways of organizing or grouping objects he will choose that one which assumes importance to him because of its relationship to his attitude.

(f) Measures based upon perceptual responses. When rival stimuli having different attitudinal implications are presented simultaneously to the two eyes (or ears) under conditions which promote binocular (or binaural) rivalry, it is assumed that the percept formed results from a central nervous system process and that attitude may be inferred from the nature of the stimulus which prevails.

(g) Measures based upon involuntary physiological responses. It is assumed that the strength of attitude may be inferred from the magnitude of the physiological response.

(h) Measures based on verbal self-reports. The inference here is that there is a direct correspondence between an individual's attitude and his description of his attitude. This assumes both that the individual is aware of his attitude and makes an undistorted report of his view of himself.

This categorization of potential attitude indicators is the same, of course, as that presented under Person Variables. This duplication is inherent to the analysis. Under Person Variables attitude is one of a number of subject attributes which may enter the determination of attitude-related behavior. Under Attitudinal Variables its status is that of an outcome variable needed for the assessment of attitude change.

Regularities in the Relationships Between Variables in the Conceptual Network

The components of the conceptual analysis as just presented are intended to serve as descriptive concepts in terms of which to cumulate and organize knowledge about the sequence of events under study. Such knowledge will take two forms. One will be the discovery of regularities in relationships among environmental, interactional and personal variables, on the one hand, and behavioral and attitudinal outcome variables, on the other. The other will be explanatory processes in the form of hypothesized psychological events which give broader meaning to the empirical regularities discovered. Needless to say, such explanatory processes provide direction to the continuing search for significant new variables and new relationships among variables.

The regularities we may expect to find in the relationships among variables will be of several levels of complexity. They will include those between pairs of variables such as a single environmental variable and a single attitude-related behavior, or between a single attitude-related behavior and attitude-strength as estimated later from an attitude indicator. They will include interactions among small numbers of variables such as a single situational characteristic, a single subject attribute of the need or motive type, attitude itself, and a single attitude-related behavior. They will include, also, interactions among larger numbers of variables, i.e., more than one variable from each of the types discussed earlier in the conceptual analysis.

In presenting the concepts I illustrated a number of the relationships we might anticipate finding among variables by reference to the example of Mr. White and his airport co-worker, Mr. Brown. Another example is provided by Katz (49) in a discussion of the results of a study by Katz and Benjamin (50). These investigators found that one subgroup of white college students (subject-individuals) showed an unexpected amount of attraction and respect for Negro college students with whom they had experienced interracial contact. Katz suggests that the unexpectedly favorable behavior might be explained by three variables--without recourse to the interaction between the white subjects and their Negro counterparts. One of the three variables he employs is a general subject attribute--high authoritarianism. A second is a situational characteristic, the presence in the contact situation of a university staff member--a potential source of social approval or disapproval. The third is a coupling and guiding event, i.e., the equalitarian behavior shown by the experimenter to the Negro students. The assumption is that this event informed the subjects that similar behavior would be expected and approved by the experimenter. In a status-oriented hierarchical situation, such as represented by university staff experimenter and student subject, the high authoritarian is thought to be more in need of authority approval than the low authoritarian. Hence, the greater frequency of equalitarian (approval-seeking) behavior on the part of the more authoritarian subgroup.

Explanatory Processes in Event Theory

In order to indicate the place of explanatory processes in event theory, I will review briefly four different analyses of the course of events in unintended interracial contact. After describing the presumed developments, initially without interpretation, I shall re-trace the course of events a second time in terms of the concepts and explanatory processes being advanced here.

1. Reorganization of Beliefs, Restoration of Cognitive Balance, and Stimulus Generalization

The first analysis begins at the point where a white who is in a contact situation against his will begins to get acquainted with nonwhites. He finds the ones he meets to be different from his expectations and changes his beliefs about them. His feelings change in line with his new beliefs. As time goes on, favorable beliefs and feelings spread to nonwhites in other settings and to nonwhites whom he does not know.

This account of how things go begins in the proximity stage. An unstated assumption is that some source of reward or approval in conjunction with some attribute of the subject brought him into the situation and is influencing him to remain. Once in the situation the subject observes either the lack of correspondence of the nonwhite to the commonly held stereotype or the similarity of the nonwhite to him in beliefs and interests, or both. During the proximity stage we might assume that the distorting effect of negative racial attitude prevailed and that consequently the nonwhites were perceived as conforming to the stereotype and being dissimilar in beliefs. We must assume, however, that eventually other situational factors lead to interaction of the subject with the nonwhites. If this interaction is sufficiently personal and intimate, it brings new information about the nonwhite's noncorrespondence to stereotype and his similarity in beliefs to bear on the subject with such force that a cognitive change occurs. This is a postulated explanatory process designated simply as a reorganization of beliefs. Underlying the process is assumed to be something like a need to know, to put things in order, to establish a manageable, understandable picture of reality. This has been identified by those who advocate the functionalist approach to attitude maintenance and change as a reflection of the knowledge or object appraisal function of attitude. According to this view, attitude, like other concepts, serves to reduce the limitless complexity about us to a limited number of internally consistent entities. If new information is extensive and sufficiently compelling, the conceptual entity embracing it may be altered.

At any rate, according to this account of things, the postulated reorganization of beliefs will mean that a set of derogatory beliefs toward nonwhites in the situation is replaced by a more favorable set. But liking for the nonwhites in the situation also changes. To explain this we postulate another process, this time a restoration of cognitive balance (86). Favorable beliefs, summing to a new level of esteem and respect, do not coexist peacefully with negative feelings; a belief-affect imbalance is said to exist. The postulated restoration of balance happily (in this example) changes affect in the favorable direction rather than reversing belief to its unfavorable early status.

Next in the course of events is the development of favorable actions and statements toward the attitude class in situations outside the contact setting. A third explanatory process is postulated to cover this step. This is stimulus generalization. It refers, of course, to the fact that stimulus cues such as skin color mediate the transfer of reactions developed to specific nonwhites to other members of the nonwhite attitude class.

2. Affect Conditioning, Restoration of Cognitive Balance, and Stimulus Generalization

The second analysis of the course of events begins with the subject engaged in interaction with the nonwhites in the situation. According to this view, he enjoys the cooperative interaction--in part, perhaps, because the outcomes of it bring rewards. He grows to like the nonwhites with whom he has been cooperating. Soon he develops favorable beliefs about them as well. Later the feelings of liking and respect spread to nonwhites outside the situation.

This course of events begins in the interaction stage. Developments prior to this have brought the subject into the proximity situation and influenced him to remain there. These same plus additional influences have been responsible for the initiation of his interaction with the nonwhites in the situation.

Interaction of the cooperative type is known to generate positive affect, particularly where outcomes of the interaction are successful and where the cooperation takes place under conditions of external threat. Affect conditioning is the explanatory process postulated to account for the attachment of this affect to the nonwhites who were present when it was generated.

In addition, according to this account, beliefs about the nonwhites in the situation also grow more favorable. For this development, restoration of cognitive balance is again called into play as an explanatory process. This time, reversing the assumption of the previous analysis, belief yields to affect rather than vice versa.

As in the first analysis favorable beliefs and feelings about the disliked group were also observed outside the contact situation. As in that case, stimulus generalization is assumed to cover the step from positive views toward nonwhites in the situation to positive views toward those outside.

3. Dissonance Reduction and Stimulus Generalization

In the third account, the course of events begins with the entry of the subject into the contact situation. Before entering

he vacillates for some time comparing his distaste for contact with nonwhites with the material and social rewards he anticipates from other sources in the situation. Once in the situation, he enters into interaction with the nonwhite participants. He develops both high esteem and a strong liking for them. Later he shows these same reactions to nonwhites in general in other settings.

This account of events begins with the initiation of the proximity stage. Negative racial attitude had led the subject to avoid the contact situation. Some contextual feature of that situation--perhaps a job opportunity--aroused in him a related economic motive. Entry into the situation thus came to have both positive and negative anticipated consequences--specifically, the expectation of satisfying an economic need as against the expectation of association with someone he thought he would dislike.

The outcome of this conflict was the entry into the situation--a counter-attitudinal act. We next assume that the counter-attitudinal act aroused dissonance. We then postulate a process of dissonance reduction achieved by an act consistent with entering the distasteful setting, namely, by entering into interaction with the members of the disliked group (6).

However, if we assume that the negative racial attitude persists through this interaction, the interaction is yet a greater counter-attitudinal act. Additional dissonance should be aroused and additional dissonance reduction should be in order. This time we assume that the dissonance reduction is achieved by an increase in liking and esteem for the nonwhites in the situation. For the generalization of these changes to nonwhites outside the situation, stimulus generalization is again called into play.

4. Social Reinforcement

The fourth analysis begins with the subject in contact with his white peers in the situation. He respects these individuals and finds they share many of his beliefs and interests. He discovers gradually that they favor racial equality and believe in equalitarian associations with nonwhites. He enters the interactions with the nonwhites in the situation as they develop. Following these interactions he shows respect and liking for the nonwhites with whom he has been associating. Both respect and liking are also shown for nonwhites in other settings.

The initial steps in this analysis occur in the proximity stage. We begin with the point about the characteristics of the peer group. The peers in the situation possess valued traits and show beliefs and interests similar to those of the subject. The significance of this is that they become a source of social

approval and arouse in the subject an approval motive.

At some point the subject learns that his white peers in the situation support racial equality and endorse equalitarian interracial association. This is a motive-coupling event. It tells the subject what to do to satisfy his aroused approval motive, namely, to endorse racial equality and interact on friendly terms with the nonwhites in the situation. When the subject follows this lead and conforms to his peer's opinions, he then receives peer group approval.

We hypothesize that the effect of this approval is to reinforce (with social incentives) equalitarian behavior and feelings toward nonwhites. We attribute to this explanatory process the observed equalitarian behavior shown later to other nonwhites.

Summary of Explanatory Processes

In these four illustrative accounts of a hypothesized course of events in unintended contact, we encounter the following explanatory processes: reorganization of beliefs, affect conditioning, restoration of cognitive balance, dissonance reduction, social reinforcement, and stimulus generalization. They will serve to illustrate how such explanatory processes supplement the network of descriptive concepts and the empirical relationships among them. With more illustrations the list would, of course, be longer.

METHOD

Two studies were carried out. Data for the initial study were collected during a three-year period from the summer of 1961 to the summer of 1964. This first study involved 23 subjects and 23 controls. Data for a replication study were collected in the period February, 1967, through May, 1969. This study involved 19 subjects and 19 controls.

Design

The plan of the study was to construct an experimental environment which would have two consequences for those who experienced it: (1) they would be induced to show equalitarian interracial behavior in this environment and (2) they would undergo a change to more favorable racial attitudes. Experimental subjects were exposed to this environment while untreated controls were not.

Persons with strongly negative scores on self-report tests of racial attitude were chosen as subjects. Others with equally negative scores served as controls. The latter made it possible to assess the effect of a number of non-experimental influences on changes in attitude test scores. Among these were the effect of taking the attitude measures a second time, the effect of regression to the mean on second testing associated with extreme scores on first testing, contemporary life experiences during the period of several months between pre-test and post-test, etc.

Components of the experimental environment expected to induce equalitarian interracial behavior were two sources of social approval (peer and authority), guiding events relating equalitarian behavior to social approval from these two sources, and attitude-relevant views of others expressed in the situation (equalitarian views by the peers).

In addition to these, other components were expected to contribute to the induction of favorable change in racial attitude. Two of these were focal environmental variables: (1) attributes of the Negro participants (clearly dissimilar to the commonly-held negative stereotype) and (2) relative status within the contact situation (Negro role equal to white). One of the variables is a non-social characteristic of the situation: i.e., its interdependence requirements (set at a cooperatively interdependent level). Two of the variables were interaction variables: (1) one is the type and extent of interdependent activity (cooperative interdependence induced by the interdependence requirements just noted), (2) the second is the degree of intimacy of the interaction (controlled at a personal and intimate level).

The manner in which each of these variables was controlled will be pointed out after the experimental setting and procedures

are described. Measures of interracial behavior taken in the experimental environment and indicators of attitude assessed before and after the experiment will be discussed under Results.

Selection of Subjects and Measures of Attitude Change

Initial Experiment

The subjects and controls in the initial study attended one of four colleges in Borderville. At the time these colleges had only white students. All subjects were girls. All lived in the South and had had little or no previous equal-status contact with Negroes which was equal-status in nature. The only significant exception was a subject who had spent her last two school years in an Indiana high school.

Subjects and controls were selected from a pool of potential participants on the basis of anti-Negro scores on self-descriptive tests intended to measure racial attitude. Three such measures were used. One of these, the Komorita Segregation Scale (58), deals with desegregation policy, with an emphasis on school desegregation. It is made up of 67 items with which the respondent may indicate strong agreement to strong disagreement. A second is a social distance inventory, the Westie Summated Differences Scale (98) covering the following areas: acceptance of residential desegregation, acceptance of Negroes in positions of community leadership, acceptance of Negroes in personal relationships, and acceptance of physical contact with Negroes. The score is based on a comparison of acceptances of whites and Negroes of identical occupations. Four hundred thirty-two ratings of acceptance are made. The third measure is a first-person sentence completion test of ten items developed by Getzels (39). These items test for reactions to a variety of experiences with Negroes, they are scattered among a large number of sentence completions on non-racial topics.

In addition to these three measures based on self-descriptive statements we used one test providing an indirect indication of attitude. This was Getzels' third-person sentence completion test; the ten items of the third-person form are identical with those of the first-person form (39) except that the action is attributed to an unknown third party.

Replication Experiment

The subjects and controls in the replication study attended three of the same colleges as had those in the initial study. By the time of this study (1967) a small number of Negro undergraduates had been admitted to each of the three colleges. With one exception all subjects lived in the South; this one lived in an

Illinois town on the Illinois-Kentucky border. Two of the 19 had spent several pre-high-school years outside the South. All were females.

However, by 1967 desegregation had produced a different picture with respect to the amount and type of previous contact the subjects had had with Negroes prior to the experiment. Only three of the 19 appeared to have lacked equal status contact. The remainder had been in desegregated situations (e.g., high school or college dormitory) where Negroes were in equal or superior status.

Two attitude instruments similar to those employed in the initial experiment were used to select subjects and controls from the pool of potential participants. One of these was a revised 15-item version of the first-person sentence completion test; four of Getzel's 10 items were retained (22). The second was the Multifactor Racial Attitude Inventory, a nine-factor, 90-item racial attitude inventory in agree-disagree format (103). Two of the nine subscales from the latter test, (1) integration-segregation policy and (2) gradualism in desegregation, are similar to the Komorita Segregation Scale used in the initial study. Two other subscales, (1) acceptance in close personal relationships and (2) acceptance in status superior relationships, require responses not unlike those of the Westie Summated Differences Scale used in the first study.

Four indirect attitude tests were included in the replication experiment; we were interested in the possibility that these tests might provide indications of attitude change supplementary to those of the direct or self-descriptive attitude inventories. One of the four tests was a revision of the third-person sentence completion test, paralleling the first-person revision described above (22). A second test, Judging Arguments, involves the subject in rating the convincingness of statements, some of which support racial segregation and others of which support integration (90). A third, Personnel Evaluation, has the subject rate matched pairs of white and black persons, basing their ratings presumably on information accompanying pictures of the individuals to be rated. The pictures themselves are presented under the guise of giving information regarding physique. The rater does not know that Negro and white pictures have been paired nor of the fact that the information accompanying matched pairs has been empirically matched in attractiveness (16). The fourth test, is an adaptation of Sympathetic Identification with the Underdog (89). The items in this test ask the subject to choose an answer saying how a Negro would feel when discriminated against. The test is intended to measure the subject's empathy with members of a disliked group.

Assignment of Persons as Subjects or Controls

Subjects and controls were located by a method to be described below under Procedure. The method involved testing potential participants in small groups of 10-15 (see Procedure). In each such group we first designated those who were eligible for the study. The criterion for eligibility was scores on the self-report attitude tests which were below the mean of a pool of college girls from the same geographical area who had been tested earlier. Had we been able to recruit all eligible persons we would have chosen the two most negative and, by random assignment, placed one in the subject group and the other in the control group. We learned immediately, however, that this was not possible. Not all persons who enrolled for the testing (see below) were free for two hours per day at times the confederates were also free. Others could not release this much time from their studies and other activities.

Accordingly, we fell back on a procedure under which we approached the most negative case in each group of potential subjects. If this person accepted, the next most negative was assigned to the control group. If she refused, however, an attempt was made to recruit the second most negative as a subject. If this was successful, then the most negative was assigned to the control group.

On some occasions neither the first nor second most negative person could be enlisted as a subject. We then moved on to the third most negative, providing only that all individuals we approached had test scores below the mean of the pool of persons referred to above. The most negative unused case was always assigned to the control group.

Occasionally, it was not possible to recruit a subject from a given small group of prospects. The most common reason for this was that the group contained only one or two eligible cases and that these, when approached, were found to be unavailable. When this happened we usually dropped back to an earlier group to recruit a subject or, when this was not possible, scheduled a new group for testing. Because the latter step involved a loss of staff time, it was avoided if at all possible.

As we shall report under Results, our subject assignment procedure resulted in slightly more negative subjects than controls in the initial experiment, and equivalently negative subjects and controls in the replication experiment. The implication of the disparity in the initial experiment for interpreting changes obtained on attitude measures will be discussed under Results.

As in all non-random assignment of experimental subjects, however, there remains the question as to whether the grounds for assignment led to systematic differences on personal attributes (other than the dependent variable) which predisposed the subjects to more change than controls would have undergone under the identical experimental treatment. We have indicated that the main influence on becoming a subject or control appeared to be environmental demands that in some cases permitted and in others prohibited participation as a subject. In addition, when we compared subjects and controls on a wide variety of personality, interest, opinion and ability measures we found no differences between them in either the first or the second study.

Procedure

The experiment was performed in the setting of a part-time job for which the subject is employed. On this job ~~she~~ works for two hours a day for 20 days in an interracial group. For reasons which will become clear, this was preceded by two periods of work where no Negroes were present. The subject did not know that she was in an experiment. To her the experience was that of a part-time job. We shall first describe the experience in chronological sequence as the subject experienced it. After this we shall indicate the manner in which the variables enumerated above were brought into play.

Subjects were recruited by way of their responses to a posted handbill or a newspaper advertisement offering part-time "taking paper-and-pencil tests of attitudes and abilities for the Educational Testing Institute." Instructions in the advertisement led them to a room in a building at Biltmore University where the Educational Testing Institute was conducting its local Borderville operations.

Here, over a ten-day period in 4-6 sessions of 2-3 hours each, potential subjects were tested for a total of 12 hours. Approximately, four hours go to ability measures, four to measures of personality and needs, two to miscellaneous social and political attitudes and two to attitudes toward Negroes. The attitude measures are scattered throughout the test battery. The potential subjects took the tests in groups of 10 to 15. They were told in non-technical terms about the problem of test-retest reliability and learned that, because of this problem, they would have an opportunity some weeks later to work for another 12 hours. This prepared them for the post-experimental measurement which will be described below.

From this pool, a subject was selected in terms of two principle considerations: First, a strong anti-Negro attitude as reflected consistently by the self-descriptive attitude tests,

and, second, availability for part-time work two hours daily for four weeks. It was rare that the persons with negative attitudes in this pool had had previous equal status contact with Negroes.

Some weeks after the testing came to an end the person selected as a potential subject received a telephone call from a faculty member at St. George College in another part of town. The latter invited the student to apply for part-time work on a "group project" and described briefly a simulated management task. This task, it was explained, was being tried out for a government agency as one of several being evaluated for the purpose of training small units which must work together under conditions of isolation such as exist at early-warning radar outposts. If this student was for some reason unavailable another student was approached in a similar manner; the procedure for selecting alternates is described in the preceding section.

There followed two days in which the subject was interviewed, tested presumably for "suitability" for the job, received some training in the management game, and was signed to a contract to work two hours a day for a month. Payment of all salary was made dependent upon completion of the full month of work.

Before describing the events of the next twenty days onward, it will be helpful to give a brief description of the management game. The task is to operate an imaginary railroad system composed of 10 stations, six lines and 500 freight cars of six different types. Successful operation involves learning how to maintain an appropriate distribution of these cars so that they are available when shipping orders are placed with the railroad. When the team receives requests to ship merchandise of specified types from one station to another, it makes decisions regarding the route to follow and the types of cars to use. These decisions are telephoned to the supervisor and his assistant working in another room. The latter maintain the fictional "computer" which furnishes the team the official records of dispersion of cars, profits earned, losses and penalties incurred, etc.

The three tasks to be done by the members of the team are:

(1) to decide which orders are to be filled, the kinds of cars to be used, and the route to be taken;

(2) to keep track of present and future availability of cars. This may involve initiating the redistribution of empty cars. This task requires close collaboration with the person doing the first task and may call for making joint decisions;

(3) to keep account of earnings and costs. This task is carried out alone but on the basis of information supplied by

the person sending orders.

The management task, as used, lasts for 40 periods. A period covers 20-30 minutes. Two such periods separated by a 30-min. break made up an experimental session. The break was explained to the subject as giving the supervisor and her assistant time to prepare materials for the second period.

On the second calendar day, as noted earlier, the subject received preliminary training for one of the three jobs, namely that of keeping track of the cars. On the third day she gathered for the first time with the other members of the management team--all strangers to her. One was white like herself. The other was Negro. Both were introduced as students from nearby colleges--which was factually correct--and acted as though they were as new to the situation as the subject. In reality, both were confederates of the experimenter.

The supervisor briefly reviewed the task and mentioned the team's opportunity to make additional "bonus" money by excelling the performance of prior teams. After answering questions (some asked purposely by the confederates) she presented the first day's shipping requests and retired to another room. Communication from the team, thereafter, was by telephone.

After 20 minutes the supervisor entered and the team decided whether it wished to use (at a penalty) up to 10 minutes overtime. Next came the 30-minute break. Food ordered at the beginning of the session was brought in by the supervisor who then, together with her assistant, left the room. The team distributed its food and conversed while eating. As explained below, this conversation was quite important to the experiment. Mid-way through the break, the Negro assistant to the supervisor, also a college student and an experimental confederate, returned from her "duties" to join the lunch and the conversation.

Later the supervisor entered, handed the team its second set of shipping requests and, together with her assistant, again retired from the room. At the end of each period the supervisor compared and reconciled accounts with the team's accountant and announced the official profit or loss.

This supposedly concluded the group activity until the next session. However, each team member was required to perform individually a reading comprehension and delayed-recall memory task on 19 occasions. The explanation given was that this was necessary as part of the background information needed to interpret the team's performance on the management game. If the students' schedules permitted, this individual task had to be done immediately following the management game sessions. The schedule of

the subject was known to permit this; the same was true of the white confederate. It was arranged, however, that the Negro confederate report herself as having another obligation at this time. She indicated this in the subject's presence and arranged another time of day for her participation. This freed her to leave. The Negro assistant to the supervisor completed her duties and also left at this point.

The supervisor then brought into the room an article for the subject to read, and a different one for the white confederate. A reading time of five minutes was allowed. The articles were then removed. Ten minutes elapsed before it was permissible to answer questions on the articles. The white confederate and the subject spent this time in conversation. The nature of these conversations, which were guided by the confederate, will be explained later.

At intervals of 3-4 calendar days the team learned how its profits compared with those of an earlier team whom it had to surpass to earn a bonus. While its fortunes varied from report to report, it was prearranged that the team finally won out and earned the hoped for extra money.

For the first 19 days of the team activity the overall procedure remained constant. There was variation only in the nature of the food-break conversation, in the 10-minute conversation between the subject and the white confederate, and in the task assignments. The nature and purpose of this variation is described below.

On the final day, the last half hour was devoted to a questionnaire filled out by each member of the team in a separate room. This was explained as a part of the procedure for evaluating the management task as a potential training task. Included were several open-ended questions about the other team members; the questions do not mention race in any way. The answers to these questions gave the subject an opportunity to indicate the degree of respect and liking she had developed for the particular Negro confederates with whom she had been associated.

Between one and four months after the part-time job at St. George College had come to an end, the subject received a letter from the Educational Testing Institute. (The four-month period resulted from summer vacations.) The letter reminded her of what she had been told during the initial testing period, namely that there would be an opportunity later to serve as a paid subject for additional tests. It gave the time and place at Biltmore University where the Institute would administer its new test series. The subject retook most of the original tests, including those tapping attitudes. A number of new tests were

introduced to add reality to the test development cover story.

As a final step in this try-out of tests, each subject (and control) was asked to test out an interview. The interview was presented as one being developed for future use by non-professional leaders in selecting volunteer workers to serve as mental health aids. Arrangements were made for each subject to conduct five interviews with girls from colleges other than their own. Three of the girls were white and two were Negro. The subject was provided with an interview guide leading her to question the interviewee about her family, her education, her activities and her feelings about certain matters. She reported her impressions of the interviewee's suitability for the work, giving reasons for her opinion. She then rated her on 14 personal characteristics, using graphic rating scales for the purpose.

Since two of the variables of importance to the study were introduced through conversations guided by the confederates, some additional description of these conversations will be helpful.

Of the twenty 30-minute lunch-break conversations involving the subject and the two confederates, nine were devoted to race relations topics on which the white confederate later (in the 10-minute test-break) expressed equalitarian views. Nine were given over to the communication of personal information by the Negro confederate. Of the remaining two, the first was spent on introductory acquaintance-building and the last on farewells.

In the nine lunch-break conversations allocated to the communication of personal information the Negro confederate presented information about herself that was designed to establish her as an individual and to weaken racial stereotypes held by the subject. A typical conversation was one about family life during which the Negro confederate covered in a natural manner her parents, her siblings, family traditions, and a recent family event.

The nine areas in which personal information was exchanged are family, recreational practices and preferences, education and occupational history and plans, boyfriends, personal inadequacies and aspirations, altruistic concerns, use of alcohol and drugs, marriage and children, and views of human nature.

The nine race relations conversations covered the following topics: non-racial aspects of Ebony, a magazine with pictures and stories on Negro persons and topics, church segregation, Negroes on college faculties, business discrimination, discriminatory public accommodations, segregated schools, social exclusion, residential segregation and civil rights initiative by Negroes.

Each conversation was developed according to this pattern: (1) a prepared introduction; (2) a transition to the racial topic; (3) a discussion of the racial topic; and (4) a transition to a non-racial topic. A description of a specific conversation will serve to illustrate this plan. In a conversation about discrimination by businesses that serve the public, the white and Negro confederates begin by discussing clothing and clothing preferences. After a few minutes of chatting about current clothing styles, with both confederates participating equally and including the subject as much as possible, the transition to the main topic is made by the white confederate asking the Negro confederate where she buys her clothes. There follows a brief discussion among the subject and confederate about stores they prefer. The topic of discrimination is then opened by the Negro confederate who comments on her preferences for stores that treat her in a more courteous manner than do others. Encouraged by questions by the white confederate, the Negro confederate gives accounts of relatives or friends encountering discriminatory practices in the city. No value judgments are made by the white confederate at this time; she appears to listen carefully and to be very interested. After the Negro confederate has completed her presentation of facts, the subject is changed by one of the confederates to a pre-planned topic not related to race.

There were in addition to the lunch-break conversations a similar number of 10-minute conversations between the subject and the white confederate. These occurred near the end of the session during the period allocated to the reading comprehension testing. In these 10-minute "test-breaks," when the white confederate was alone with the subject, she followed up the race relations conversations of the lunch-break. On each such occasion the same outline was followed, with the white confederate covering three specific points: disapproval of discriminatory practices, approval of present non-discriminatory practices, and recognition of current progress toward desegregation. The confederate began with an introductory topic designed to involve the subject. For example, she might remark on the current fashion in skirt length, compliment the subject on the skirts she wore, and ask the subject if she has noticed the skirts in the windows at store X. From this point it was possible for her to make an unobtrusive reference to the earlier three-way conversation and say that it seems silly when one looks back and remembers that this store once didn't employ Negroes as salesclerks (i.e., disapproval of discriminatory practices). She then remarks that it is good that the city's better stores are leading in this area and setting a policy that it is likely other stores will follow (i.e., approval of present non-discriminatory practices). The third point is made in her discussion of restaurants and hotels that have not lost business upon desegregating (i.e., recognition of current progress toward desegregation). For each of these sections of

the conversations, the white confederate had memorized statements that would be helpful in leading into the topics and for involving the subject. She would, for example, ask the subject if she likes the clothes at a certain store, or if she has eaten at a restaurant in question.

In order that she may assume the role of a reference person from whom social approval is desired by the subject, the white confederate was careful not to depart too far from the subject's views. In early conversations she appeared to hold racial views not too dissimilar to those of the subject, and over time she seemed to change her attitude from interest and mild concern to definite pro-Negro feelings. For example, in an early conversation she limited herself to admiring the fashions in an Ebony magazine, while in a later conversation, she expressed definite feelings that residential segregation is undesirable. Likewise, she expressed values similar to the subject in areas such as religion. If the subject was a regular church-goer, the white confederate was careful to establish herself as one also.

Appropriate ways of presenting the material scheduled for a given session were developed by the confederates in training sessions. Role playing was used extensively in training, with staff members assuming the role of the subject. As the experiment proceeded, each experimental period was preceded by a refresher training session. The two confederates reviewed previously planned ways of making the material seem to arise naturally, usually through one confederate's asking questions of the other. They also planned ways of involving the subject in the conversation by questioning her frequently about the topic under discussion and by maintaining eye contact with her.

How these operations brought into play the variables enumerated at the beginning of this section can now be indicated.

Sources of social approval. Two persons representing strongly valued sources of social approval made up part of the experimental situation. The supervisor was a white adult having the prestige associated with a university staff member. The white confederate was a peer with attractive social characteristics who expressed many beliefs and preferences similar to those of the subject.

Guiding events. Both the staff member and the white confederate modeled equalitarian behavior toward the Negro confederate. They directed an equal proportion of their comments to her and showed consideration and respect for her. As indicated in the conceptual analysis it is assumed that this behavior guides or informs the subject regarding the type of action toward the Negro participant that will receive social approval.

Attitude-relevant views of others expressed in the situation. In the ten-minute conversation between the white confederate and the subject in the Negroes' absence, the former brought the conversation back to the lunch-break topic. In the context of what had been said there about race relations, she indicated her sympathy for the Negro confederates and her disapproval of segregation. She recalled related instances of desegregation; indicated her belief that these are on the increase and her approval of this fact. She was permissive toward expression of disagreement and reservations by the subject and discussed them with understanding. However, she was careful not to imply endorsement.

Attributes of the Negro participants: extent of dissimilarity to commonly held stereotypes. The Negro confederate was selected and presented throughout as being personable, able, ambitious and self-respecting. She performed well her assignments in the management game.

Relative status within the contact situation. The Negro confederate was defined by the situation as being an equal member of the team. Status here is limited to its specific situational meaning. The broader community status of Negroes and whites in Borderville is, of course, quite disparate.

Built into the procedure was a rotation of team assignments, explained in terms of possible "sickness" among the crews of small isolated units. This further enhanced the situational equality of the subject and the Negro confederate.

The interdependence requirements of the situation. The requirements of the management game are such as to involve the subject in efforts to achieve a goal in common with the Negro participant. The game requires collaborative efforts and success and failure come to the management team as a whole. The confederates are trained to share responsibility for decisions with the subject.

Type and extent of interdependent activity. The interdependence requirements of the situation, as just described, led to close interaction and mutual assistance especially when the subject and the Negro confederate were paired in the two assignments requiring collaboration. They discussed their procedures and decided together on changes that would be helpful. They shared reverses as well as successes day by day for 20 days. Rotation of team assignments put the subject in the position both of teaching the Negro confederate and being taught by her.

Degree of intimacy of the interaction. This variable refers to the extent of personal, intimate information about the Negro participant brought out in the interaction. The two Negro confederates brought into each food-break conversation facts about

themselves, their histories, their future plans and aspirations, their families, etc., and such personal feelings as preferences, tastes, apprehensions, dislikes, disappointments, etc. Sometimes these were volunteered; sometimes they were evoked by planned questions from the white confederate. A frequency count was kept for each confederate of the personal information brought out in each of ten categories. This served as a basis for controlling the personal information variable and roughly equating it from subject to subject.

Variations in Procedure Between the Initial and the Replication Experiments

1. In the initial experiment a given Negro confederate was used with no more than two subjects. The purpose of this was to guard against the possibility that such change in attitude as might occur was due to the favorable qualities of one or a small number of highly selected Negroes. This practice was continued for the first ten subjects in the replication experiment. However, for practical reasons it was relaxed for the last nine; for this last group one Negro confederate was used for four subjects and another for five.

2. The conversations through which the white confederate made known her race-related views were somewhat different in the initial experiment from those described under Procedure above. The nature of the difference was that the areas in which desegregation was advocated were less extensive. In 1961-1964 we were apprehensive that a white confederate who advocated residential desegregation, federal intervention to prevent local discrimination and Negro initiative in achieving civil rights would be seen by the subject as too different from herself to serve as a valued source of social approval. By the 1967-1969 period enough change had occurred in Borderville and throughout the country so that we felt this was no longer true.

3. In the course of the initial experiment we made a number of changes in the conditions under which the white confederate acquainted the subject with her pro-integration views. The intent of the changes in each case was to increase the extent to which the subject was affected by her experience. The different conditions and the reasons for adopting them are described below:

A. Peer's pro-integration views expressed with Negro present; 20 sessions (N = 3). This initial version differed from that described under Procedure in one major respect: The pro-integration views of the white confederate were voiced in the lunch-break between the management game sessions rather than in the 10-minute test-break introduced later in the experiment. Her views were expressed in apparent reaction to the accounts of discriminatory

experiences given by the Negro confederate.

B. Peer's pro-integration views expressed with Negro present; 15 sessions (N = 4). Evidence became available to indicate that the first two subjects in the preceding group had developed attitudes much more favorable than those with which they began the experiment. We were encouraged by this to attempt to minimize the large investment of time being made in each subject. As a step in this direction we reduced the number of experimental sessions to 15 (3 weeks). An unintended by-product of this was that the 9 race-related discussions became a more prominent aspect of the lunch-break conversations.

C. Same as version A (N = 4). The post-experimental attitude tests on the first two subjects of the 15-session version of the study described above indicated that no attitude change had occurred. This coincided with a staff impression that, under the shortened version, the white confederate might be losing her value as a reference person for the subject because the conversations made her seem concerned with race relations to the exclusion of other matters. Accordingly, at the next opportunity, we returned to the initial plan of 20 sessions.

D. Same as Version A, with the addition of a supplementary discussion between subject and the white confederate with the Negro confederate absent (N = 4). It had become clear by this point in the experiment that when the two confederates exchanged views on race relations the subject most of the time remained silent or attempted to change the subject. This raised the possibility that she was unable to voice her questions and negative feelings in the Negro confederate's presence and that this inability to engage her views with those of the white confederate lessened the latter's impact. To counter this we added the memory test with its 10-minute waiting period, as described under Procedure. During this period the white confederate, by reference to the lunch-break conversation, gave the subject the opportunity to say things about the race-related topic which she might have suppressed. If the subject took advantage of this opportunity the confederate acknowledged the difference of opinion and politely re-stated her own point of view.

E. Peer's pro-integration views expressed in discussion with Negro absent; 20 sessions (N = 8). This version is the one described under Procedure and used in the replication experiment. In it the race-related discussion was initiated in the lunch-break but the white confederate delayed expressing her pro-integration views until she was alone with the subject in the 10-minute "test-break." Version D above had not resulted in the hoped-for confrontation of views between the subject and the white confederate. Version E achieved this by making the subject the single

and direct target of the confederate's pro-integration statements.

4. The post-experimental interviews conducted by the subjects and controls with three white and two Negro strangers had a different function in the initial experiment than that described under Procedure. We had been aware from the start that experience with the two Negro confederates in the contact situation might lead the subjects to make of them favorable exceptions to Negroes as a group. Beginning with the 15th subject in the initial experiment an attempt was made to lessen this possibility by having the subjects become acquainted, however briefly, with two other Negro girls.

The method used to accomplish this was to have them conduct interviews with persons said to be under consideration for employment in the next try-out of the management game. The explanation given was that persons who had themselves participated successfully might be able to select others who would be equally successful. The interviews were conducted during the week following the final experimental session.

RESULTS

In this study we compared subjects and untreated controls on changes they showed on indicators of attitude following an experimental experience. The attitude indicators are of two types: (1) privately expressed attitudinal self-descriptions, assessed by means of self-report attitude scales and (2) performance on tests on which the subject is unaware of the influence of attitude on his responses, i.e., indirect attitude tests.

The experience to which the subjects were exposed occurred in the context of unintended interracial contact, a setting our highly prejudiced subjects would ordinarily avoid. The components of the experience were chosen in an effort to induce friendly and cooperative relationships. A by-product of studying the influence of this experience upon attitude was the opportunity to observe and analyze attitude-related behavior of anti-Negro whites toward Negro persons whom they encountered in a racially mixed situation. The behavior observed was of three types: (1) actions toward Negro co-workers, (2) positions taken publicly on race-related matters, and (3) post-experimental evaluations of Negro co-workers. Whatever we say by way of interpreting the determinants of this behavior will, of course, be speculative since the study design did not provide for an experimental analysis of its antecedent conditions.

Although the study did not involve hypothesis-testing in the usual sense, expectations with respect to its outcomes may be stated as follows:

1. The highly prejudiced white subjects in the experiments will, despite their prejudice, be friendly to and cooperate with their Negro co-workers.
2. Subsequent to the expression of integrationist views by a white confederate, the prejudiced subject will respond by endorsing policy positions contrary to the segregationist ones he has previously stated under private test-taking conditions.
3. At the end of the experiment the subjects will express for their Negro co-workers a degree of liking and respect equivalent to that which they express for their white co-workers.
4. From the pre-experimental to the post-experimental tests the subjects will become more favorable in their privately expressed, attitudinal self-descriptions than will their equally prejudiced controls.
5. From the pre-experimental to the post-experimental

tests the subjects will show more favorable attitudes on indirect attitude measures than will their equally prejudiced controls.

The results will be presented in order as they relate to these five predictions. Results from the initial experiment and from the replication experiment that are applicable to each prediction will be presented together.

Actions Toward Negro Co-workers

The persons chosen to be subjects in this study were college-age girls from the prejudiced extreme of a pool of potential subjects. All grew up in an area where derogatory views of Negroes and advocacy of racial segregation are commonplace. While we would not expect crude or hostile actions from such persons toward Negro strangers, neither would we expect them to be cooperative and friendly.

Our recruiting procedure brought such persons into unintended cooperative association with individuals whom they disliked and would have chosen to avoid. In constructing the situation which they experienced we assumed that we counteracted their attitudinal inclinations by the introduction of the following variables: (1) the presence of two sources of social approval (a white adult supervisor and a valued white peer), (2) guiding events which link equalitarian behavior with approval from these sources, and (3) equalitarian views expressed in the situation by the white peer. The first question we ask is whether these variables influenced our anti-Negro subjects to show friendly actions toward their Negro co-workers.

Initial Experiment

In the first study an observer behind a one-way mirror made a systematic record of the subjects' behavior toward the Negro confederate and the supervisor's Negro assistant. Some of the behavior categories are positive: (1) complimentary statements, (2) friendly personal questions, (3) joking and shared laughter, (4) sharing food, (5) taking initiative in work collaboration, (6) physical contact, (7) doing favors and extending sympathy. Others are negative: (1) sarcastic and belittling statements, (2) failing to respond to questions and statements, (3) taking precautions to avoid physical contact, (4) interaction with the white confederate to the exclusion of the Negro confederate.

A frequency count of positive actions and another for negative actions was made each day and summed over four-day periods. Three scores are available for each subject for each four-day period: frequency of positive actions, frequency of negative actions and a difference score, i.e., positive minus negative

actions. Examination of these scores reveals a heavy predominance of positive actions for the first four-day period as well as for the first and second periods combined. The positive-minus-negative frequencies for the first four-day period have a median of 11. While six of the subjects have scores around zero (-2 to +1), the remaining 16 range from 4 to 34. For the first eight-day period the median frequency is 25.5; four subjects are around zero (0-2) while the other 18 range from 10 to 88. Negative actions in both periods are infrequent. For the first four-day period the median frequency is one; for the first eight-day period it is four.

The above data seem consistent with the expectation that social influences operating in the situation control the subjects' initial attitude-related behavior. Further examination of these data suggest, nevertheless, that the influence of negative attitude on this behavior is also evident. This was discovered by examining the positive and negative action frequencies in relation to an item in one of the attitudinal pre-tests.

The item occurs in the first-person, sentence completion test and reads, "If they put a Negro to work next to me, I would _____." This, of course, is just what happens to the subject in this experiment.

Eight of the subjects answered that they would quit or begin seeking another job. Three said they would continue working but would ignore the Negro. Six indicated they would continue working or (also) be friendly. The remainder gave answers like "be surprised" which could not be scored on a dimension relevant to this analysis.

These three groups of subjects are compared below in terms of the difference score reflecting the frequency of positive actions over negative actions. For the first four-day period the following emerges:

Friendly Actions (Difference Score)

	N	Median	Mean
"Quit" group	8	5	7
"Continue but ignore" group	3	13	11
"Continue, or be friendly" group	6	16	17

In other words, the more positive the answer to the "work-next-to"

question the higher the frequency of positive over negative actions.

The same trend shows when the difference scores are taken from the first eight rather than the first four days.

Friendly Actions (Difference Score)

	N	Media.	Mean
"Quit" group	8	20	18
"Continue but ignore" group	3	28	30
"Continue, or be friendly" group	6	38	48

We looked at the same relationships by asking where the three different types of subjects stood when they were ranked in order of frequency of positive-over-negative actions. It developed that four of the six subjects from the "continue, or (also) be friendly" group are concentrated in the more-positive-action third of the ranked frequencies while the other two are in the middle third; this is true for both the first four and the first eight days. By contrast, the eight "quit" subjects split evenly between the least positive and the middle thirds.

All of the above trends hold also when the analysis is carried out on positive actions only or negative actions only.

Replication Experiment

There was no systematic recording of the subjects' actions toward the Negro confederate in the second study. We felt it unnecessary to repeat this work having observed that for most subjects friendly behavior began almost immediately and reached its peak in days five through eight.

As a result we are unable to check in detail the observation reported above. What is available in the replication experiment is a daily log prepared by the supervisor following each day's session. Among the items the supervisor was asked to note in the log were instances of friendly and unfriendly behavior by the subject to the Negro confederate. Many instances of friendly behavior were observed and recorded: food sharing, friendly questioning, physical contact, complimentary statements, offers of and requests for assistance, etc. By contrast to these observations the log showed only two instances of unfriendly behavior for all 19 subjects over the 20 sessions.

The sentence completion item we used in the first study to characterize the subjects' anticipated reaction to a Negro co-worker was not included in the second study. However, a substitute was available in one of the indirect measures, Personnel Evaluation. In this test the subject rates the acceptability of persons in various relationships to herself. One relationship was "willing to have _____ work along side me on a job." From this test we took each subject's ratings of four persons, each identified by a photograph as Negro and each accompanied by a pleasing personality sketch. The mean ratings could range from an average of 1.00 (strong rejection of all four persons) to an average of 5.00 (strong acceptance of all four). The obtained range among the 19 subjects was from 1.00 to 4.50. This again makes the point that the situational induction of predominantly positive action is feasible across a wide range of individual predictions of what one would do in a hypothetical situation.

It was not possible to check, as we did in the initial experiment, whether the nature and strength of such anticipated reactions relates to the frequency of observed positive actions. In the absence of systematic observations of such actions, data for such a comparison are not available. Anecdotally, however, we can report, that the only subject averaging complete rejection of all four Negroes she rated was the one responsible for the only two instances of negative action which the supervisor reported.

Summary

To summarize, in our initial experiment we observed that the most anti-Negro subjects in a pool of white college students in a city in the border South show predominantly positive actions toward Negro co-workers during the first hours of their unintended contact with them. However, within this group of students this is less true of those who have said earlier in another setting that they would quit if given a Negro co-worker and more true of those who have said, without qualification, that they would continue working or continue working and be friendly.

On the one hand, this is consistent with our expectation that the situational influences we introduced would outweigh attitudinal influences on attitude-related action. It suggests also, however, that, within this effect, the strength of negative racial attitude also influences such action. Since the design of the study does not rule out other possible determinants of the actions and the relationships we observed, the inferences we have drawn are suggestive only.

Positions Taken Publicly on Race-Related Matters

Persons with negative attitudes toward a social group might be expected to support policies unfavorable to that group. In the previous section we noted the introduction of situational variables which may constitute influences countering that of negative attitude. Such variables relevant to the discussion in this section, are (1) the presence of a source of social approval (the white confederate) and (2) equalitarian views expressed by this individual. We assume that one effect of expression of these views is to serve as guiding events to the subject to indicate which statements by her would be approved and which disapproved by the white confederate. The question to be examined in the following discussion is whether or not these variables influenced our anti-Negro subjects to voice equalitarian positions in race-related discussions held in the experimental setting, i.e., to take positions contrary to those which might be expected on the basis of statements to which they subscribed in the pretests.

Initial Experiment

As described under Method the subject is a party to nine race-related conversations during the course of the experiment. In the first study these conversations took place at the lunch-break between two management game sessions or (for the last eight subjects) partly at this time and partly at the 10-minute test break. During each of these conversations the white confederate made the same points: She disapproved of discriminatory practices in the area under discussion; she approved of non-discriminatory practices, and she noted evidence of progress in reducing discrimination. In some conversations she, in addition, endorsed the use of law and governmental authority to eliminate discrimination and segregation.

The conversations were tape-recorded and studied to determine the nature of statements made by the subject in relation to each of the points made by the confederate. For the first 15 subjects of the initial experiment the white confederate's policy positions were voiced in conversational interchanges with the Negro confederate. While the two confederates kept the subject involved in the conversation no explicit effort was made to elicit a statement of opinion from her. For the last eight subjects the white confederate's positions were voiced in the 10-minute test break with the Negro confederate absent. Here the confederate's comments were necessarily aimed at the subject. Moreover, as she expressed her views, the confederate attempted to keep a conversation going, giving the subject ample opportunity to express her own points of view. On the other hand, we placed no stress on evoking an expression of opinion from the subject.

Under these conditions the characteristic outcome was for the subject to avoid taking a position. For example, in the conversation covering desegregating social relationships the white confederate made four policy statements of an equalitarian nature. During this conversation 16 of the 23 subjects took no position at any time. Six of the remaining seven voiced one opinion each, while one voiced two. Of these eight opinions four were similar to those expressed by the confederate and four were different.

Similarly, in the conversation about desegregating schools a parallel pattern emerged. Eight of the subjects said nothing at all regarding their own views. Eight gave a single statement of opinion, typically in support of the confederate's viewpoint. Of the remaining six two stated two or more positions similar to those of the confederate, two stated positions that were similar in part, while only two made two or more statements in opposition.

As we noted earlier such an outcome is subject to more than one interpretation. On the one hand, it may be considered consistent with our expectation that situational characteristics would control the subjects' verbal behavior. According to this interpretation, the principle effect of the situation was to restrain the voicing of positions for which the subject anticipated disapproval. On the other hand, it is also possible that the subject was not restrained by situational influences but remained silent out of a lack of interest in or concern about the topic under discussion. What is needed to avoid this ambiguity are discussions in which the subjects more frequently take favorable or unfavorable positions. Fortunately, such discussions were available in the replication experiment.

Replication Experiment

In the second study greater effort was made to evoke the subjects' views on points made by the confederate. This was accomplished by conversational techniques such as having the confederate wait longer before going on to her next point, by having her occasionally ask, "How do you feel about that?", etc. As will be seen below, this had the effect intended, at least to some extent.

In reporting the nature of the policy positions taken by the subjects in the conversations we will relate them to similar positions taken earlier by the subjects on a parallel item from one of the attitudinal pre-tests.

In the conversation on eliminating discrimination among businesses that serve the public, the confederate condemns discriminatory treatment of Negro customers. Thirteen of the 16

subjects who take a position in response join in the condemnation while three justify the discrimination. By contrast, when we look at what the subjects say on the same topic before the experiment begins, a very different result is found. One of the attitudinal pre-tests had an item which read, "A person should not have the right to run a business in this country if he will not serve Negroes." Eighteen of our 19 subjects disagreed with this statement; for at least 13 of these 18 we appear to have a reversal of opinions as stated on the test and voiced in the situation. It is possible that another seven avoided such a reversal by remaining silent.

When the position taken by the confederate is more strongly equalitarian, a few subjects voice contrary positions. For example, when the confederates advocated eliminating discrimination in business by law, eight subjects agreed but five objected (five remained silent). Moreover, we now see evidence of a possible relationship between position taken in the test and in the conversation. Of the five subjects who had agreed on the pre-test that an employer should be required to hire workers without regard to race, three (60%) endorsed the confederate's view (one silent and one negative). By comparison, of the 12 who did not agree with this requirement of an employer, only four (33%) supported the confederate while four (33%) opposed her statement.

When the confederate's statement moves still more strongly in the desegregated and non-discriminatory direction, the proportion of opposing statements increases still further. In the discussion of school desegregation, for example, the confederate advocates immediate, legally enforced school integration. In response, six subjects took an opposed position while only one endorsed the confederate's views; eleven took no position. In a related pretest item 16 of the 18 subjects answering had disagreed with the statement, "The best way to integrate the schools is to do it all at once."

The conversation on desegregating social relationships provides us with another instance of the relationship between pretest statements and position taken in the conversations. One of the confederate's statements endorses the idea that everyone should choose his friends without regard to color. Four subjects had said on the pretest that they were willing to have Negroes as close personal friends. All four supported the confederate's position. Thirteen had said they were not willing to have Negroes as personal friends. Six, or less than half of these, supported the confederate's position. One of the thirteen repeated her test position in the discussion while another six remained silent.

Summary

To summarize, it would appear that persons who have earlier expressed negative views on race-related matters on attitude tests will remain silent in a situation where these views are disapproved. If such persons are induced to take positions they will most often voice the situationally approved view in contrast to the view they privately expressed earlier. When the matter at issue involves a more extreme deviation from the subjects' position, this acquiescence occurs with lower frequency. Moreover, at some point on this continuum the subject begins to take attitudinally-consistent, situationally-disapproved positions.

As we said in the previous section, these findings are consistent with our expectation that the situational influences we introduced would outweigh attitudinal influences on attitude-related behavior, but also suggest that, within this effect, racial attitude also influences such behavior. Again we note that this must be taken as suggestive only since the design of the study does not rule out other possible determinants of the conversational behavior we have reported.

Post-experimental Evaluations of Negro Co-Workers

A person who has become acquainted with a member of a disliked group as a result of unintended contact may have occasion to express feelings and opinions about him. Feelings may range from liking and a preference for future association, to dislike and an intention to avoid in the future. Opinions may range from respect to derogation.

On the final day of the experiment, following farewells at a food-break joined by the supervisor and her assistant, each of the subjects was asked to answer a number of questions about her co-workers. This was explained in terms of a need for information to help interpret the performance of the management trio as a group.

To answer the questions the subject (as well as her two co-workers) was taken to a separate room. It was understood that the team members would not see each other again; it was stressed that the job was finished.

The questions were introduced as follows: "We are particularly interested in how the crew worked together. Any predispositions or expectations you had would be of interest to us. Answers to the following questions are confidential and will be seen only by the staff of the project."

Following three questions about the management game itself,

three questions were asked about each of the co-workers. These questions were as follows:

1. "How did you feel about crew member #1 when you first got together? Explain why you felt as you did. (Refer to crew members by initials.)

2. "Did your feelings about crew member #1 change during the four weeks? If so, how?

3. "If you had another job to do as a member of a three-person crew, would you like to have #1 work with you? If so, why? If not, why not?"

Such expressions of feeling and opinion, like those discussed earlier, are instances of attitude-related behavior influenced potentially both by attitude and by the environmental variables built into the contact situation. We might anticipate that the more the subject believes her views to be known to others in the situation the more they will be influenced by environmental variables. Conversely, it seems reasonable to expect that the less the subject believes her views will be known, the more her statements will reflect the nature and strength of her racial attitudes. In research on "interpersonal attraction" this assumption prompts investigators to ask subjects for private, confidential ratings of persons with whom they have associated but will not see again. Some investigators label such ratings "attitudes"--sometimes toward the person rated and sometimes toward the social group to which he belongs.

Typically, however, as is the case in this experiment, certain situational characteristics remain prominent even when ratings are private. Even private ratings must be asked for, and seen by, the investigator. He is a source of social approval-disapproval and through his actions may provide unintentionally a guide for the kind of evaluation he would favor. In addition, as a representative of an institution (i.e., the university) he may activate institutional norms supporting equalitarian behavior. Even though not conscious of such influences the subject may be influenced by them as he writes his evaluative statements.

Still other variables may influence the subject's post-experimental evaluations. Among these are the attributes of the Negro co-worker and the nature of the subject's extended interaction with her (and secondarily with the Negro confederate assisting the supervisor). Such influences may produce positive evaluations of individual Negroes without influencing racial attitude itself. What appear to be identifiable examples of this phenomenon will be given below.

Given these alternative determinants of favorable evaluations

of the Negro participants, we will be limited to speculative interpretations of the following sort. Positive evaluations, in the absence of other indications of a change to positive racial attitude, may be understood either in terms of immediate situational influences (e.g., experimenter approved behavior) or of the development of positive relations with individuals. If accompanied by evidence from satisfactory attitude-indicators of a change to favorable attitude, then attitude also must be added to the list of possible determinants.

Negative evaluations in this setting, on the other hand, seem more likely to reflect the subject's negative racial attitude, suggesting it to be strong enough to outweigh opposite-direction influences on the evaluations rendered.

The answers given by the subjects to the question about initial feelings could be categorized as favorable, neutral or unfavorable. Favorable answers are illustrated by the following:

1. When I first met crew #1 (P. B.) I knew from the beginning I liked her and we had a lot in common.

2. I felt working with J. P. would be interesting. I have never been close to a Negro and this was an excellent chance to become friends.

Neutral reactions were of two sorts, (1) uncertain and (2) balanced between favorable and unfavorable. Examples are:

1. When I first met D. B., I formed neither an impression of like or dislike; she was there.

2. When I first saw R. and the fact that she was a Negro-- it set me back a bit but I made up my mind not to let it interfere with my working with her. She made no particular impression on me one way or the other. She seemed very friendly but a bit prejudiced against us because of our color.

Responses classified as negative were:

1. J. E. was nice but I was rather careful about what I said around her because she was a Negro and I'd never been around a Negro person with more than a passing acquaintance.

2. At first I resented having to work with D. B. I had never worked with one of her race. I had always felt they should stay with their own group and we should stay with ours.

Among the 23 subjects of the first study one reported negative initial feelings, ten reported themselves as having been

neutral, and the remaining 12 were positive. Among the 19 subjects of the second study, there was one negative and two neutral reports; the remaining 16 were positive.

The contrast between either set of reported initial reactions to Negro strangers and the test-based indications of highly negative racial attitude is, of course, striking. It should be recalled that the tests used included self-descriptive statements regarding interracial association and that among these are numerous statements rejecting personal association with Negroes.

It must be remembered, also, that these accounts of initial feeling are rendered a month after the initial meeting with the Negro confederate. While, as suggested above, the favorable reports may have been influenced by the subject's perception of the expectations of others in the situation, it is also possible that either successful interaction with the Negro confederate or, when it occurred, change to a more favorable racial attitude may have colored the recall of earlier feelings.

In the first study all except one of the subjects (7 of 8) who showed most change on attitude-indicators from pre-test to post-test (see next section) reported favorable initial reactions to the Negro confederate. Of the 15 showing little or no attitude change five reported initially favorable reactions. Assuming this to be other than a fortuitous association, it suggests an additional possibility, namely, that for these big-change subjects the favorable initial reaction was a precursor to later change.

Given the high frequency of favorable initial reactions among subjects in the replication experiment, little change in position could be expected on the second question regarding change in feelings. Eighteen of the 19 subjects answered this question with favorable feelings and 17 of the 19 reported themselves as more favorable than they had been initially. Eighteen of the 19 would choose the Negro confederate as a team member if another three-man job was in the offing. Reasons given for this included both competence and favorable personality.

In the initial study, where approximately half the subjects had been initially negative or neutral to the Negro stranger, the position taken on the second question is of somewhat greater interest. Favorable feelings at the end of the four weeks are reported by 20 out of 23. Nineteen of these 20 report, in addition, a strengthening of positive feelings; the twentieth is a continuation of the initial positive feeling without an increase. Twenty of the 23 would choose the Negro confederate for another work group; again reasons were balanced between personality and competence.

One of the two subjects in whom initial feeling had been reported as negative became favorable. Her account is quoted below:

"At first I resented having to work with D. B. I had never worked with one of her race. I had always felt they should stay with their group and we should stay with ours.

"My feelings changed very much about D. B. I began to like her very much and it helped me to understand that they want the same thing out of life that we want. She seemed very friendly and came right out with her feelings about her race and the white race.

"If I had to work as a member of a three-person crew I would like to work with her again. She is easy to get along with, and didn't depend on others to do her work. I think it would profit me a great deal to work with her as it would help me understand that she is just as human as I am."

In two instances in the two groups of subjects, feelings for the Negro confederate changed from favorable to less favorable. An account of one of these follows:

(Question 1) "When I first met 'B' I liked her immediately. She has a sparkling personality. Also, I was glad for the opportunity of getting to work with a Negro girl my age. I've never been around one at all before and I wanted to know how they felt and what they thought. She seemed willing, if not eager, to talk about the segregation issue, and I was glad. I have mixed emotions and I thought this might help decide."

(Question 2) "A little changed, I think, although I like her and did enjoy working with her, I don't think I would like to have her for a friend. This is because I think she is a little too loud and silly and she irritates me a little (I hope this is unprejudiced judgment--in regard to her race)."

(Question 3) "I wouldn't particularly mind (i.e., working with her again) but I think I'd prefer to work with someone else like L. (Note: The Negro assistant to the supervisor)."

One dimension of variation in favorable feelings to the Negro confederate is the extent to which the subject portrays her feelings as relevant to or irrelevant to her racial attitude. It should be remembered that the questions do not call for racial comments. Two illustrations follow, one disassociating the Negro confederate from racial attitude and the other relating her to it:

1. I think that if all colored students were as nice as

K. F. then it wouldn't be so bad to have to go to school with them. They aren't all like K. F. and that's the trouble; there are too many Negroes who think that they are too smart and they don't have to stand by and let the whites take over.

2. My opinion about B. M. did not change (i.e., remained favorable). My opinion of the Negro students as a whole has changed though. They are so much like us--same attitudes, goals, etc. My feelings on this subject were hazy but are now much clearer.

Summary

To summarize, we find the subjects with rare exceptions reporting highly favorable evaluations of the individuals they have come to know from the group they dislike. If we interpret these evaluations to reflect the effect of immediate situational influences on the subjects, parallel to the effects we observed in the race-related conversations, the results supply further evidence of the influence of environmental factors on attitude-related behavior. If, however, we believe them to reflect reactions relatively free of situational influence, we encounter a phenomenon with important implications for the management of desegregation. As we shall show in the following sections, the evidence indicates that a minority of the subjects in the two studies experienced substantial changes in attitude. The majority show little or no change. What this tells us is that, when exposed to experiences like those in this experiment, persons with negative attitudes to a social group may come to like and respect individuals from the disliked group without the requirement of a prior change in attitude to the group. It is feasible, in other words, to develop friendly relationships between white and Negro individuals involved in mandatory desegregation, even though generalized intergroup attitudes are initially unfriendly and remain so.

Privately Expressed, Self-Descriptive Attitudinal Statements: Self-Report Attitude Tests

As noted in the theoretical section, self-descriptive attitudinal statements may sometimes be judged to be free enough of situational influences to be taken as attitude indicators. We described under Method the steps taken to administer attitude tests under such circumstances. The testing location was at a point in the city removed from the experiment. No person connected with the experiment was associated with the tests. The tests were administered under a "test development" rationale in which it appeared that the tests rather than the test takers were being evaluated. The attitude tests were scattered among aptitude, personality and opinion measures in a twelve hour test battery.

A test-retest reliability rationale was provided in advance for the second administration of the tests.

The question we now ask is whether initially highly prejudiced persons who undergo the experimental experience show more change in self-descriptive attitudinal statements than do equally prejudiced controls. The experimental experience, it will be recalled, is made up of a complex of environmental variables believed on the basis of previous questionnaire and field research to characterize interracial contact in which attitude change occurs.

Initial Experiment

The three self-report attitude tests used in the initial experiment are described under Method. They were the Komorita segregation scale, the Westie social distance scale and the Getzel's first-person sentence completion test.

For reasons discussed earlier it was important to know whether the procedure for selecting subjects and controls had led to more extreme scores in one group than another. Comparisons of means on each of the three tests for the two groups (t-test) show them to be similar enough for the differences to have arisen by chance ($p > .10$ in all cases). However, the direction of the differences was the same in all three tests; the mean of the subjects was in each case in the direction of more negative attitude.

Standard scores for each subject and control were computed for each of the three tests using for this purpose the mean and standard deviation of the pool of 207 persons tested in the process of locating potential subjects. The three standard scores were averaged to provide an overall indication of the extent to which each subject and control was anti-Negro at the time of the pre-test. The mean for the 23 subjects is -1.06 ; for the 23 controls it is $-.81$. A t-test of the difference between these means approaches the .05 level of significance ($t = 1.91$, $p < .10$, two tailed). Whether or not this tendency for persons assigned as subjects to be initially more distant from the mean of the population from which they were selected than those assigned as controls creates difficulties for interpretation of changes from pre-experimental to post-experimental test scores is discussed below.

Change scores for each subject and each control on each of the three tests were computed by subtracting the pre-experimental from the post-experimental score. Mean change scores were computed for subjects and for controls on each test. As shown below, differences between the means were all in the predicted direction although only one reached the .05 level of significance:

Differences in Mean Change Scores: Subjects
versus Controls

Test	Subjects		Controls		t
	N	Mean favorable change	N	Mean favorable change	
Komorita segregation	23	29.0	23	9.7	1.49, $p < .10$, one-tailed
Westie social distance	23	67.6	23	28.1	1.16, N.S.
Getzels first- person sentence completion	23	2.39	23	-.78	1.91, $p < .05$, one-tailed

Change scores for each test were converted to standard scores using for this purpose the standard deviation of the distribution of scores for the 207 persons referred to above. For each subject and control the three standard scores were averaged to produce an overall change score in standard score terms.

The mean change per test for subjects was .45 standard score units (favorable direction) while that for the controls was .11 units. This difference is statistically significant; a t-test for the difference between means shows it to have been unlikely to have arisen by chance ($t = 1.70$; $p < .05$, one-tailed).

Replication Experiment

The analysis just described was repeated for the two self-report tests used in the replication experiment. These tests, as described under Method, were similar to but not identical with those used in the first experiment. They were the Woodmansee-Cook Multifactor Racial Attitude Inventory and the Cook-Selltiz first-person sentence completion test.

Mean scores for the subjects and controls on the pre-experimental tests were compared. The subjects were slightly more negative on the first-person sentence completion test, while the reverse was true on the Multifactor Racial Attitude Inventory. Neither difference approaches significance ($p > .10$).

Standard scores were computed for each test using the mean and standard deviation of a pool of 273 potential subjects. The average of the two standard scores provides an overall indication of the extent to which each subject and control is anti-Negro at the time of the pre-test. The mean for the 19 subjects is -1.27; for the 19 controls it is -1.11. A t-test of the difference between these means does not approach significance ($t = .76$; $p > .10$).

Comparison of changes made by subjects and controls is complicated by the presence among the controls of one extremely deviant case. In terms of average change on the two tests this individual changed an average of 3.86 standard scores on each by comparison to 1.19 standard scores for the next highest control case. The addition of her score alone tripled the net total change shown by the remaining 18 control cases.

Since the score for the deviant case made the mean score for the controls unrepresentatively high in relation to the degree of change in the remaining controls, we might anticipate that t-tests of mean differences would show no difference between subjects and controls. The figures below indicate that this is the case.

Differences in Mean Change Scores: Subjects
versus Controls

Test	Subjects		Controls		t
	N	Mean favorable change	N	Mean favorable change	
Cook-Selltiz first person sentence completion	18	8.16	19	2.79	1.51, $p < .10$, one-tailed
Woodmansee-Cook Multifactor Racial Attitude Inven- tory	19	8.47	19	5.32	.66 N.S.
Average standard score	19	.63	19	.30	1.14 N.S.

Two analyses were carried out to provide some indication of the effect of the deviant case on the t-test comparisons. One of these simply omitted the deviant score, reducing the number of

controls to 18. The results are shown below:

Differences in Mean Change Scores: Subjects
versus Controls

Test	Subjects		Controls		t
	N	Mean favorable change	N	Mean favorable change	
Cook-Selltiz first person sentence completion	18	8.17	18	.72	2.51, $p < .01$, one-tailed
Woodmansee-Cook Multifactor Racial Attitude Inventory	19	8.47	18	2.06	1.81, $p < .05$, one-tailed
Average standard score	19	.63	18	.10	2.41, $p < .025$ one-tailed

The second analysis substituted a constructed case for the deviant control. The change scores of the constructed case were set equal to those of the next highest change scores found in the study, i.e., for one of the subjects. The results of this analysis are given below:

Differences in Mean Change Scores: Subjects
versus Controls

Test	Subjects		Controls		f
	N	Mean favorable change	N	Mean favorable change	
Cook-Selltiz first person sentence completion	18	8.16	19	1.89	2.00, $p < .05$, one-tailed

(Continued)

(Continued)

Test	Subjects		Controls		t
	N	Mean favorable change	N	Mean favorable change	
Woodmansee-Cook Multifactor Racial Attitude Inventory	19	8.47	19	3.84	1.19 N.S.
Average standard score	19	.63	19	.21	1.73, $p < .05$, one-tailed

Both of these supplementary analyses suggest that, but for the extreme amount of change shown by the deviant control case, the amount of change shown by subjects would have dependably exceeded that shown by controls. In order to check this in a way that would be minimally influenced by an extreme case, a non-parametric test (Mann-Whitney U) was employed. The results of this analysis were as follows:

Differences in Change Scores:
Subjects versus Controls

Test	Subjects N	Controls N	U
Cook-Selltiz first person sentence completion	18	19	91.5, $p < .01$, one-tailed
Woodmansee-Cook Multifactor Racial Attitude Inventory	19	19	127, $p < .06$, one-tailed
Average standard score	19	19	117, $p < .05$, one-tailed

It seems reasonable to conclude from these various analyses that, on the self-report attitude measures, the subjects in the replication experiment, like those in the initial experiment,

changed reliably more than did the controls.

Regression to the Mean as an Alternative Explanation of Greater Change Among the Subjects

In presenting the pre-experimental comparisons of subjects and controls in the first study we noted that the scores of the subjects fell below the mean of the total pool of tested persons by an average of .26 standard score units more than did the controls. The question this raises is whether the greater changes observed among these subjects may be accounted for, at least in part, by greater regression toward the mean associated with more extreme pre-test scores.

Some light on this question may be obtained by determining whether greater changes are indeed correlated with more extreme initial scores. A correlation based on the untreated controls would provide the least ambiguous estimate of this since one based on the subjects would encounter the complication that the experimental influence may have greater impact on the more negative than on less negative subjects. (This has been reported frequently in attitude change studies.)

A product-moment correlation between size of average pre-test standard score and size of average change score (standard score units) for the controls in the first study was .33. For an N of 23 we may not be confident that this is different from a correlation of zero ($p > .10$). When the same correlation was determined for the controls in the second study, the coefficient was .46. However, the size of this correlation was due entirely to the magnitude of the scores of the deviant control discussed above. When the correlation is computed with this case omitted it drops to .05. Of, if computed by a rank difference method (Spearman-Brown), with the deviant case included, it drops to .19. Thus while we appear to have a very slightly tendency for untreated controls to change more if they begin with more extreme scores, it is doubtful that the tendency is strong enough to account for the greater changes observed in our first experiment in our somewhat more extreme subjects.

While, as noted above, a positive correlation between extremity of pre-test score and amount of change in the subjects (rather than the controls) could not be unambiguously interpreted to indicate differential regression to the mean, we determined these correlations, nevertheless. For the first experiment, r was .39 ($p < .10$). For the second it was .13. The small size of these coefficients gives further reason to doubt that differential regression has contributed to any significant extent to the differences in change scores between subjects and controls.

Substantial vs. Minor Change Among Individual Subjects

The comparison of mean changes found in the subjects and controls does not bring out one significant aspect of the attitude change that occurred. This is that the obtained group difference is accounted for by rather substantial changes in a minority of the subjects with a majority showing little or no change.

In studying the results of the initial experiment we noticed that the change in self-described attitudes tended to be large when it occurred. Expressing change in average standard score units per test, there appeared a natural break in the score distribution at .82. Eight subjects changed this much or more (six were above one S. D.) while the next highest subject changed an average of .55 standard score units. Perhaps by coincidence we found exactly the same picture in the replication experiment. This time nine subjects had changed an average of .82 units or more with the next highest subject again at .55 units. In both experiments most of the subjects clustered around zero change with one or two in each experiment showing substantial negative change.

When we looked at change scores for the controls in the two experiments, a clear contrast with the above pattern emerged. In the first experiment two, by comparison with eight, reached the .8 standard change score. In the second it was three, by comparison with nine, who changed to this extent.

Qualitative Description of Changes in Attitudinal Self-Description

We selected three persons from among those who showed substantial change in each experiment and compared their pre-experimental and post-experimental statements. The differences are quite striking.

For the three subjects from the first study they are as follows: The first had initially rejected the idea of having Negroes on her city council or heading her community chest drive. She balked at sharing restrooms and beauty parlors with them. She was averse to the idea that she might exchange social visits with Negroes or have them as dinner guests. All of these relationships she accepted at the time of the post-test.

The second had endorsed complete residential segregation but after the experiment said she would welcome Negroes in her part of town. She came to accept them in leadership positions from which earlier she wished to exclude them. She made the same change with respect to exchanging social visits with Negroes and sharing with them beauty parlors, restrooms, and dressing rooms

in department stores.

The third subject made similar changes. She abandoned entirely her former endorsement of residential segregation, accepting Negroes as next-door neighbors. She moved entirely away from rejecting the idea of potential physical contact with Negroes in beauty parlors, restrooms and dressing rooms. She came to accept them as social visitors and dinner guests.

The differences shown by the three subjects in the replication experiment are as follows:

The first subject originally rejected the idea of attending a party given by a Negro couple in their home and preferred not to have Negroes as dinner guests with most of her friends. She also stated that she wouldn't attend a supper at her church if a Negro youth group were invited, and felt that she would rather not have Negroes swim in the same pool that she did. At the time of the post-test, she agreed to participate in all these activities, and reversed her earlier refusal to vote for a Negro for Congress or President. Whereas on the pre-test she had stated her objection to being evaluated by a Negro personnel director in a job interview, she now agreed to this. Her position as a segregationist was modified considerably on the post-test, as she presented herself as in sympathy with responsible Negroes fighting for desegregation, believing that schools should be integrated since desegregation has been declared illegal, and that desegregation would go more smoothly if put into effect immediately. She agreed that the Negro and white man are inherently equal, an idea she had rejected earlier.

A second subject made similar changes. She moved from objecting to contact with Negroes in social situations to accepting them as dinner guests, close personal friends, and companions on a weekend trip. Her earlier relegation of Negroes to a lower position in society changed to belief that Negroes and whites are entitled to the same social privileges, and she came to accept Negroes as heads of local charity drives, personnel directors, lawyers, and co-workers on campus problems. Further, she abandoned her earlier endorsement of school segregation, accepting the idea that integration benefits both races, and stated agreement that immediate desegregation is desirable and that Negroes should be encouraged to hold demonstrations at places where they are treated unfairly.

The third subject, who had also advocated segregation, made a similar change in position. At the time of the post-test she had come to agree with the idea that integration should be forced upon those who don't wish it, and stated support of civil rights workers who attempt to force acceptance of desegregation. She

moved away from her strong endorsement of the rights of businessmen to discriminate, accepting the idea that persons who will not serve Negroes do not have the right to run businesses. She shifted from rejection of Negroes as leaders or personal friends, becoming willing to consult a Negro lawyer or work with a Negro on a campus problem. Socially, she changed to accept Negroes as dinner guests, agreed to swimming in the same pool, eating together in a restaurant, and introducing Negroes to her friends and neighbors.

Summary

We may characterize the impact of our complex of environmental variables upon self-described attitudinal statements as follows: Taking the two experiments together 17 of 42 subjects (40%) show impressive change of potential practical significance. Five of 42 controls (12%) show change of similar magnitude. Considering the resistance to change which we expect from those with strong negative racial attitudes and the relatively brief exposure of the subjects to the change-producing experience, the results pay high tribute to the knowledge acquired by behavioral scientists of the attitude change process--at least insofar as this process is reflected in change in attitudinal self-description.

Indirect and Disguised Indicators of Racial Attitude

In the theoretical statement the point is made that self-description is only one of the possible indicators of attitude. A variety of other possibilities exist, ranging from overt attitude-related action to physiological responses to the attitudinal object. These possibilities, as a group, are commonly referred to as indirect or disguised; these terms reflect the assumption that the research subject is not aware of the relationship of his behavior to his attitude and, in some cases, could not control it if he were.

Initial Experiment

In the first study, as described under Method, we used the Getzels 10-item third-person sentence completion test. The assumption behind such a test is that the respondent, not knowing what the third person, e.g., "Mary," would do in the situation described in the sentence can only answer in terms of his own predispositions to action.

A comparison of the means of pre-experimental scores for subjects and controls showed them not to differ ($t = .84$, N. S.). Change scores were computed by subtracting pre-experimental from post-experimental scores. A comparison of subjects' and controls'

mean change scores showed them to differ in the predicted direction ($t = 1.94$, $p < .05$, one-tailed). Subjects changed significantly more in their readiness to attribute to third persons more favorable actions toward Negroes.

Replication Experiment

In the second experiment, four indirect measures were used. These measures are described under Method. One of the measures was the Cook-Selltiz 15-item revision of the third-person sentence completion test discussed above. One of the three remaining tests, Judging Arguments, is based on the principle that a person who agrees with a policy finds it somewhat more convincing than one who does not. Another, Personnel Evaluation, assumes that in the absence of complete information about an individual, a rater's evaluations are unknowingly influenced by his attitude to the group from which the rated individual comes. The fourth test, our adaptation of Harding and Schuman's Sympathetic Identification with the Underdog, assumes that the more favorable a person's attitude to a group the more accurate he will be in describing the feelings of a member of that group who has been discriminated against or treated in a derogatory manner.

A comparison of the pre-test mean scores of subjects and controls on each of the four tests indicates that they do not differ ($p > .10$ in all cases).

When change scores are compared on each test for subjects and controls we find no significant differences between means for any of the four tests used. The comparison on the third-person sentence completion test, however, tends toward a difference in favor of the subjects. Examination indicates that the difference fails to reach significance because of the extreme deviance among the controls; the extent to which the change scores of this individual confused the comparison of subjects and controls on the self-descriptive tests has been described above. On this test the deviant control's change score is twice the size of that of the next highest control and three times that of the third highest. The change score for the deviant control is 34; the net sum of change scores for the remaining 18 controls is 50.

In view of this we conducted the type of supplementary analyses described above for the self-report tests. The results were similar although not as clearcut. When the deviant control is omitted the mean change of the subjects is significantly higher than that for the controls ($t = 1.82$, $p < .05$, one-tailed). When the next highest change score (i.e., for the highest changing subject) is substituted for that of the deviant control, the mean change for the subjects is again found to be higher but not at an acceptable probability level ($t = 1.37$, $p < .10$, one-tailed).

Finally, on a non-parametric test (Mann-Whitney U) the change scores of the subjects surpass those of the controls, although again at a less-than-acceptable confidence level ($U = 136.5$, $p < .10$, one-tailed).

Although the above analyses, taken alone, would not allow sufficient confidence that a difference exists between subjects and controls on this test, we should assess them in light of the more dependable difference found in the initial experiment. The joint findings of the two studies cumulate to considerable confidence that, on third-person completion items, subjects change more than do controls.

Summary

Interpretation of this section of our results in conjunction with the results on self-descriptive tests presents a dilemma. With the exception of the third-person sentence completion procedure, indirect attitude indicators show no evidence of attitude change. Unless self-description (under the conditions of this study) is judged to be a valid indicator of attitude while indirect measures are not, our findings are clearly inconsistent. How to resolve this inconsistency will wait upon the results of other studies in which both types of indicators are utilized.

SUMMARY AND DISCUSSION

This study was designed primarily to determine whether or not persons with initially negative racial attitudes would have these attitudes changed by an experimental experience. In addition, the study provided an opportunity to study the effect of this experience upon social relationships within the experimental setting.

The components of the experimental experience were abstracted from the results of previous research on personal contact between members of hostile ethnic groups. Three of these components were expected to induce the subject to display equalitarian interracial behavior in the experimental situation. These were sources of social approval (peer and authority), guiding events relating equalitarian behavior to social approval from these two sources, and attitude-relevant views of others expressed in the situation (equalitarian views by peers). Other components were expected to contribute, along with these three, to the induction of favorable change in racial attitude. Two of these were environmental variables related to the Negro participants: (1) attributes of the Negro participants (clearly dissimilar to the commonly held negative stereotype) and (2) relative status within the contact situation (Negro role equal to white). One component was a non-social characteristic of this situation: i.e., its interdependence requirements (set at a cooperatively interdependent level). Two of the components were interaction variables: (1) the type and extent of interdependent activity (cooperative interdependence induced by the interdependence requirements just noted), (2) the degree of intimacy of the interaction (controlled at a personal and intimate level).

We are in a position to interpret with confidence only the findings on attitude change; here, the research design provided for equally prejudiced, untreated controls. However, since the attitude change findings take on added interest in the perspective provided by observations from other aspects of the study, they will be discussed as part of a series of interrelated research findings.

Before reviewing the major findings we should report an informal observation. It begins with the fact that the racial attitudes of our subjects were strongly negative; we knew from pre-experimental selection tests that they preferred to avoid interracial contact whenever possible. We countered these preferences by constructing a work setting containing several positive incentives. As expected, when they entered this setting our subjects were surprised to find themselves with Negro co-workers. Contrary to what we might have predicted from their attitudes, however, every subject who accepted a job completed the 20 sessions. We interpret these observations simply as another

demonstration that it is possible to bring anti-Negro persons into close relationships with Negroes by employing incentives which counteract the unpleasantness they anticipate experiencing in an interracial setting.

With regard to behavior toward Negroes encountered in the interracial setting we stated three expectations in the introduction to the report. One of these was that despite their prejudice the white subjects would be friendly to and cooperate with their Negro co-workers. Our observations indicated that this was almost uniformly the case; there was a high frequency of friendly behavior while unfriendly behavior was extremely rare. We found also, however, that the frequency of friendly behavior varied with self-reported strength of negative attitude—i.e., persons whose pre-experimental attitudinal self-descriptions included the strongest opposition to working with Negroes less frequently showed friendly behavior than those whose opposition was less strong. We interpreted these results as showing the influence both of the situational variables operative during the initial work sessions and the subject's pre-experimental racial attitude.

We stated as a second expectation with regard to the subject's relationships with the Negroes in the contact situation that, subsequent to the expression of integrationist views by a white confederate, the subject would respond by endorsing policy positions contrary to the segregationist ones he had previously stated under private test-taking conditions. What we found was that persons who have earlier expressed negative views on race related matters will remain silent in a situation where these views are disapproved. When remaining silent becomes sufficiently awkward they will most often voice the situationally approved view in contrast to the one they privately expressed earlier. However, as the position taken in the discussion deviated more and more from the subject's own position, he acquiesces with less frequency. When the contrast with his own views becomes even more extreme, he begins to take attitudinally consistent, situationally disapproved positions. As we did above, we interpret these observations to reflect the influence of both the situational variables (namely the presence of a source of social approval and the equalitarian views expressed by this individual) and the subject's negative racial attitude.

A third expectation with respect to the subjects' behavior toward Negroes encountered in the contact situation was that they would develop and express a degree of liking and respect for Negro co-workers equal to that they express for their white co-workers. We found that almost without exception this proved to be the case. The Negro co-workers received highly favorable evaluations on rating scales administered after the working sessions had been terminated and the co-workers had parted for the

last time. We recognize two possible interpretations of this outcome. The first is that it is but another reflection of the considerable influence of situational variables on the behavior of the subject, i.e., the high ratings are in response to the equalitarian expectations of the work supervisor to whom they are given. The other interpretation is that the evaluations reflect a true attraction and respect by the subjects for the Negro co-workers. The tone of many of the evaluations make it seem likely that the latter is the case. This carries an implication of considerable practical significance, namely that persons with negative attitude to another social group may come to like and respect individuals from this group without the requirement of a prior change in attitude. It may be feasible, in other words, to develop friendly relationships between white and Negro individuals involved in mandatory desegregation even though generalized intergroup attitudes are initially unfriendly and remain so.

Finally, with respect to a change in racial attitudes we began the experiment with two expectations. One of these was that the subjects would become more favorable in their privately expressed attitudinal self-descriptions than would their equally prejudiced controls. The other was that the subjects would show more favorable changes on indirect attitude measures than would their equally prejudiced controls. Our findings from the initial experiment and the replication experiment were very similar. In both studies the subjects changed more than their controls on self-descriptive attitudinal statements and ratings, but not on indirect attitude tests. We can offer no explanation for this discrepancy.

Of considerable interest is the fact that the group difference between the subjects and the controls is accounted for by rather substantial changes in a minority of the subjects (40%) with a majority showing little or no change. We are exploring a lengthy series of personality tests in a search for variables which might explain the difference between those who change and those who do not. However, as yet, nothing of interest has been uncovered.

The discovery that some subjects show a substantial change while others show little or none gives rise to two interrelated speculations about the attitude change process as it applies to strongly held negative attitudes. The first is that, in the case of such attitudes, small changes are kept out of awareness by attitude maintenance processes which serve to provide the individual a sense of internal consistency. Only when these changes cumulate to a degree which represents a new position is it possible for the subject to recognize in himself and to voice a new position. A second and related implication is that additional subjects would

have shown change after a longer period of exposure to the experimental influence. This assumes that other subjects had undergone change which at the time of the post-experimental testing sessions they could not yet report because of the hypothesized attitude maintenance processes.

IMPLICATIONS OF THE RESEARCH

In the Introduction, the possibility was raised that the results of this research might have implications for the management of desegregation. In particular we noted two questions to which the research might help to provide answers: (1) Might one introduce into the school setting teaching practices and administrative influences which would lead students with negative racial attitudes to exhibit harmonious and cooperative interracial relationships? (2) If such relationships develop could one make of them an educational experience that would bring about favorable changes in racial attitude?

It is evident from our results that the answer to both questions is yes. We found that the introduction of specifiable activities and social influences will lead anti-Negro individuals to demonstrate friendly interracial behavior and to publicly endorse equalitarian social practices. We observed that prejudiced persons who under such conditions become acquainted with members of a group they dislike will develop respect and liking for them as individuals. It follows from this that we have the knowledge to foster good relationships among persons from antagonistic social groups in advance of bringing about a change in their overall intergroup attitudes. Finally, we showed that behavioral scientists now know the principles of attitude change needed to capitalize on the opportunity for such change that is presented by mandatory desegregation.

There is, of course, a gap between the discovery of significant relationships in one setting and the act of engineering their application in a second setting. It would be unwise, therefore, to specify for desegregated schools the operational parallels to the variables in our research. We have no doubt, however, that they may be found. The factors with which we worked--authority approval, peer approval, expression of views on societal practices, cooperative working arrangements, arrangements for exchange of personal intimate information--are readily available in school settings. To harness them could be accomplished through a straightforward application of engineering research.

In view of the magnitude of the management problem which mandatory desegregation poses for the nation's public schools we must emphasize our conclusion that the knowledge needed to turn this development to constructive ends is no longer the issue. Those school systems which in the future blunder into racial friction and breed racial polarization do so either out of ignorance of the relevant scientific findings or because they lack the resources or the concern to apply them.

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APPENDIX

ENUMERATION AND DEFINITION OF CONCEPTS

Note: A systematic list of working concepts is needed to supplement the overview of the conceptual analysis presented in the text. Such a list is in the process of development. These pages are included to illustrate the effort which is underway.

Environmental Variables

Focal Environmental Variables

A. Characteristics of the Focal Attitudinal Object

Among the characteristics of the disliked person five have been emphasized: First is the extent to which the individuals from the disliked group correspond to or differ from the commonly held stereotypes about the group. For example, the general belief in the culture may be that members of the disliked group are unintelligent, lazy, and without ambition. The particular individuals of that group who are in the proximity situation may be of this sort or they may be intelligent, industrious, and ambitious; or they may present a range with some being one way and some another.

Second is the extent to which the disliked group members manifest generally valued social traits, such as friendliness, helpfulness, honesty. These are the traits which generally sum up to admiration and respect by others.

Third is the extent to which the disliked group members manifest task competence in situations where this is important to the safety or success of the subject, e.g., a competent non-white supervisor of an interracial work group in a mine (71).

Fourth is the extent to which the disliked group members are similar to the subject-individual in beliefs, attitudes, and values. The subject may be conservative politically; the non-whites may be conservative or liberal. The subject may be interested in world affairs, in baseball, in making money; the non-whites may or may not share these interests.

Fifth is the relative socioeconomic-educational status of the disliked group member. Nonwhites in the situation may be higher than, equal to, or lower than the white subject in this respect.

B. Features of the Situation Directly Involving the Focal Attitudinal Object

One such variable is the relative status within the proximity situation of the subject-individual and members of the disliked group. The positions to which the subject-individual and members of the disliked group are assigned within the proximity situation do not necessarily correspond to the pattern of their status relationships in the general society. In a given work situation, for example, members of one group may be present only in menial jobs, while members of the other group are in skilled or supervisory positions; in another work situation, members of the two groups may be doing the same kinds of jobs.

A second variable of this sort is the proportion in which the disliked group is represented in the situation. This may range from an insignificant proportion through a moderate number to a large majority.

Situational Characteristics

A. Social Characteristics of the Situation

There may be persons in the situation who represent potential sources of reward and gratification, on the one hand, or of deprivation and punishment on the other. It is clear that these reward sources (such as Mr. White's supervisor in our illustration) in conjunction with attributes of the subject (Mr. White's economic need) often have an effect upon the subject-individual's actions toward the disliked group member.

The persons who represent potential sources of reward and punishment might be classified in a number of ways. Two categories will serve to illustrate the possibilities. One of these is sources of social approval or disapproval. Any individual is sensitive to the approval or disapproval of certain other persons and groups. Which persons or groups have this quality depends upon the history of the individual. Common examples are religious authorities, social leaders, leaders of membership groups, etc.

Among the situational sources of social approval of interest to this analysis are the following:

1. Peers of the subject. College students (81) and factory workers (56) appear to influence the behavior of their fellows; one interpretation is that this results from a fear of disapproval.

It seems probable that the extent to which peers serve as valued sources of social approval depends upon two characteristics.

One of these is the extent to which they are similar to the subject in beliefs, attitude and values. The other is the extent to which the peers manifest generally valued social traits, that is, are persons likely to be admired and respected.

2. The subject's "significant others." Among such persons the following may have special significance as a source of social approval: a parent, a friend, a valued leader, an authority figure. In addition, the approval value of the experimenter for the student research subject has been discussed by a number of investigators (9, 70, 76, 87).

3. Representative of one of the subject's reference groups. Among research findings which suggest that a reference group representative who is present will constitute an influential source of social approval are the following: In public a person will state a different stand on matters of morality than he will in private (99). The same is true with respect to the position taken on the use of alcohol (97). In the presence of other union members and of other members of a neighborhood protective association a person may take contradictory stands on race relations (64). When giving his views in the presence of other members of a cooperative residence, a student will adapt his views in the direction of those listening (40).